

Access DB# 195392

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HOA VAN LE Examiner #: 60626 Date: 12 July 2006
Art Unit: 1752 Phone Number: 302-1332 Serial Number: 101791559
Mail Box and Bldg/Room Location: REN 9D61 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): please see the attachment

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.

JUL 12 2006

Please search for
polymer (copolymer) having repeating units
of formula (1) and formula (2)

Thank you.

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EL</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>7-13-06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 11:42:47 ON 13 JUL 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> d his

FILE 'LREGISTRY' ENTERED AT 11:04:26 ON 13 JUL 2006

L1 STR
L2 STR
L3 STR L1

FILE 'REGISTRY' ENTERED AT 11:12:57 ON 13 JUL 2006

L4 SCR 2043
L5 5 S L3 AND L2 AND L4
L6 317 S L3 AND L2 AND L4 FUL
SAV L6 LE559/A

FILE 'LREGISTRY' ENTERED AT 11:15:08 ON 13 JUL 2006

L7 STR L3

FILE 'REGISTRY' ENTERED AT 11:16:18 ON 13 JUL 2006

L8 10 S L7 SSS SAM SUB=L6
L9 1 S L6 AND IDS/CI

FILE 'LREGISTRY' ENTERED AT 11:18:27 ON 13 JUL 2006

L10 STR L7
L11 STR L2

FILE 'REGISTRY' ENTERED AT 11:22:37 ON 13 JUL 2006

L12 2 S L10 AND L11 SSS SAM SUB=L6
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SAV L13 LE559A/A

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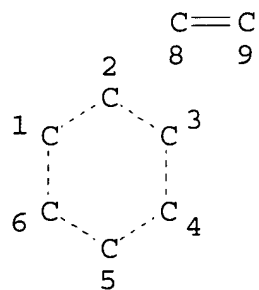
L14 42 S L13
L15 155 S L6
L16 92243 S RESIST OR RESISTS OR PHOTORESIST?
L17 40 S L14 AND L16

L18 141 S L15 AND L16
 L19 7347 S (POS# OR POSITIV?) (3A)WORK?
 L20 75 S L15 AND L19
 L21 74 S L18 AND L20
 L22 27 S L17 AND 1840-2003/PRY,PY
 L23 61 S L21 AND 1840-2003/PRY,PY
 L24 351079 S ?SULFONIC? OR ?SULFONAT? OR ?SULPHONIC? OR ?SULPHONAT?
 L25 15634 S PAG OR PAGES OR P(W)A(W)G OR PHOTOACID? OR PHOTOGENERAT?
 L26 29 S L23 AND L24
 L27 29 S L23 AND L25
 L28 14 S L26 AND L27

FILE 'REGISTRY' ENTERED AT 11:42:47 ON 13 JUL 2006

=> d l13 que stat

L2 STR



12 O E1

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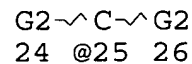
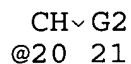
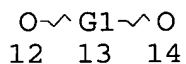
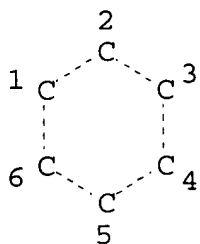
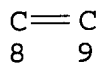
HCOUNT IS E1 AT 12
 CONNECT IS M2 RC AT 8
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L3 STR



VAR G1=CH2/20/25

VAR G2=ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU

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CONNECT IS E2 RC AT 14

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DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

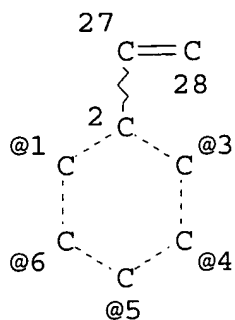
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

L4 SCR 2043

L6 317 SEA FILE=REGISTRY SSS FUL L3 AND L2 AND L4

L10 STR



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@12 13 14 17

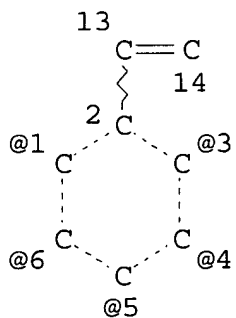
CH~G2
@20 21

G2~C~G2
24 @25 26

VAR G1=CH2/20/25
VAR G2=ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU
VPA 12-3/4/5/6/1 U
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 12
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE
L11 STR



OH @17

VPA 17-3/4/5/6/1 U
NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L13 53 SEA FILE=REGISTRY SUB=L6 SSS FUL L10 AND L11

100.0% PROCESSED 307 ITERATIONS

53 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 11:42:57 ON 13 JUL 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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=> d l22 1-27 cbib abs hitstr hitind

L22 ANSWER 1 OF 27 HCA COPYRIGHT 2006 ACS on STN

142:400566 Chemically amplified positive-working electron beam-, x-ray-, or EUV-sensitive **resist** composition and method for pattern formation using the same. Mizutani, Kazuyoshi; Yasunami, Shoichiro; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005099558 A2 20050414, 48 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-334832 20030926.

AB The title compn. contains a resin increasing the soly. in alk. developers by an acid and an electron beam-, x-ray-, or EUV-sensitive acid generator, wherein the resin has repeating unit -O-C(R1)(R2)-O-[-C(R3)(R4)]_m-Z1(R1-2 = H, alkyl; R3-4 = H, alkyl, cycloalkyl; m = integer 0-20; Z = alkyl, cycloalkyl, aryl, alicyclic group) or -O-C(R5)(R6)-O-W-Y-Z2(R5-6 = H, alkyl; Z = alkyl, cycloalkyl, aryl, alicyclic group; W = 2-valent connecting group; Y = -O-, -OCO-, -COO-, etc.) and repeating group -O-C(R11)(R12)(R13)(R11-13 = alkyl, alicyclic group) or

-C(=O)-O-C(R14)(R15)(R16)(R14-16 = alkyl, alicyclic group). The compn. shows high sensitivity and provides pattern of high resolu. and good profile.

IT 849744-14-5P 849744-16-7P 849744-19-0P

(resin in pos.-working electron beam, x-ray, or EUV-sensitive **resist** compn.)

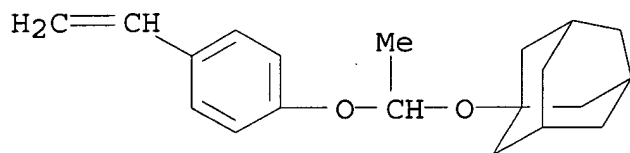
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CN Phenol, 4-ethenyl-, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 1-[1-(4-ethenylphenoxy)ethoxy]tricyclo[3.3.1.1^{3,7}]decane (9CI) (CA INDEX NAME)

CM 1

CRN 849741-89-5

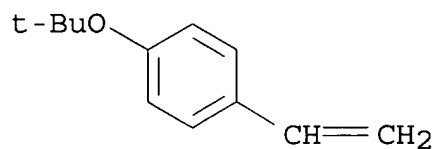
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CM 2

CRN 95418-58-9

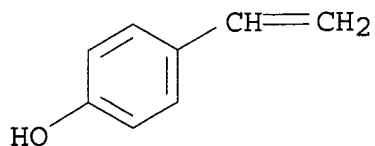
CMF C12 H16 O



CM 3

CRN 2628-17-3

CMF C8 H8 O



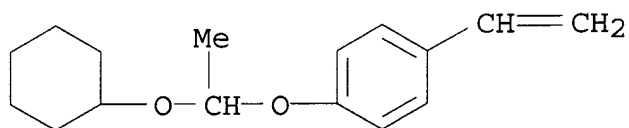
RN 849744-16-7 HCA

CN Benzoic acid, 4-ethenyl-, 1,1-dimethylethyl ester, polymer with
1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene, ethenylbenzene and
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

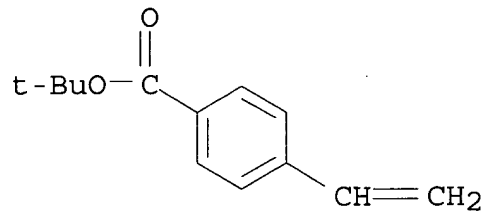
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CM 2

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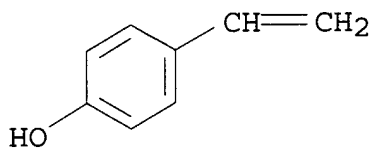
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CM 3

CRN 2628-17-3

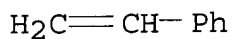
CMF C8 H8 O



CM 4

CRN 100-42-5

CMF C8 H8



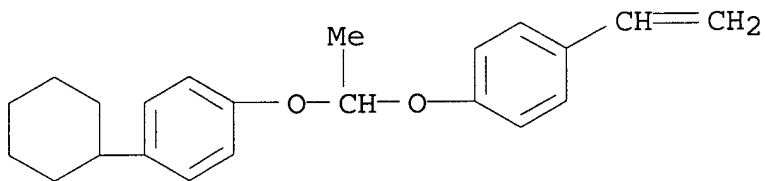
RN 849744-19-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[1-(4-ethenylphenoxy)ethoxy]benzene and 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 849741-94-2

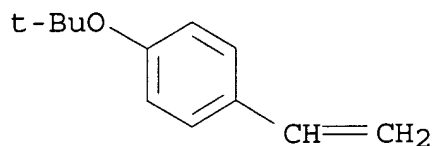
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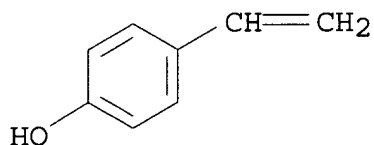
CMF C12 H16 O



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST amplified pos electron beam x ray EUV **resist** compnIT Electron beam **resists**

Photolithography

Positive **photoresists**X-ray **resists**

(pos.-working electron beam, x-ray, or EUV-sensitive

resist compn. and method for pattern formation using the same)IT 19600-49-8, Triphenylsulfonium acetate 197447-16-8 270563-96-7
365971-84-2 389859-76-1(acid-generator in pos.-working electron beam, x-ray, or EUV-sensitive **resist** compn.)IT 849744-12-3P **849744-14-5P 849744-16-7P****849744-19-0P** 849744-22-5P 849744-25-8P 849744-29-2P

849744-32-7P 849744-36-1P 849744-39-4P

(resin in pos.-working electron beam, x-ray, or EUV-sensitive **resist** compn.)

L22 ANSWER 2 OF 27 HCA COPYRIGHT 2006 ACS on STN

142:400565 Chemically amplified positive-working electron beam-, x-ray-, or EUV-sensitive **resist** composition and method for pattern formation using the same. Mizutani, Kazuyoshi; Yasunami, Shoichiro; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005099557 A2 20050414, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-334831 20030926.

AB The title compn. contains a resin increasing the soly. in alk. developers by an acid and an electron beam-, x-ray-, or EUV-sensitive acid generator, wherein the resin has repeating unit -O-C(R1)(R2)-O-[-C(R3)(R4)]_m-Z1(R1-2 = H, alkyl; R3-4 = H, alkyl, cycloalkyl; m = integer 0-20; Z = alkyl, cycloalkyl, aryl, alicyclic group) or -O-C(R5)(R6)-O-W-Y-Z2(R5-6 = H, alkyl; Z = alkyl, cycloalkyl, aryl, alicyclic group; W = 2-valent connecting group; Y = -O-, -OCO-, -COO-, etc.) and repeating group -C(=O)-O-C(R14)(R15)(R16)(R14-16 = alkyl, alicyclic group) to generate a carboxy acid compd. The compn. shows high sensitivity and provides pattern of high resolu. and good profile.

IT **849741-90-8P 849741-92-0P 849741-95-3P**

(resin in pos.-working electron beam, x-ray, or EUV-sensitive **resist** compn.)

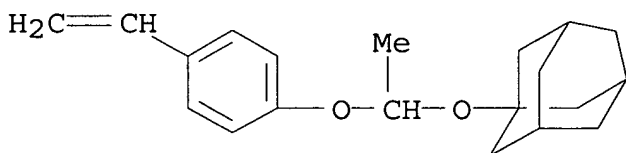
RN 849741-90-8 HCA

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.3,7]dec-2-yl ester, polymer with 4-ethenylphenol and 1-[1-(4-ethenylphenoxy)ethoxy]tricyclo[3.3.1.3,7]decane (9CI) (CA INDEX NAME)

CM 1

CRN 849741-89-5

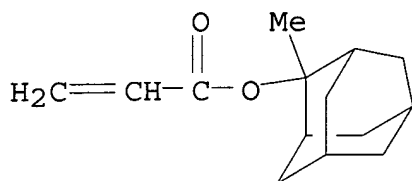
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CM 2

CRN 249562-06-9

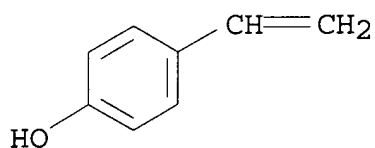
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



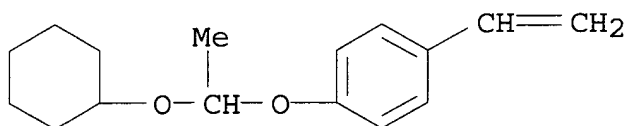
RN 849741-92-0 HCA

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with
1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene, ethenylbenzene and
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

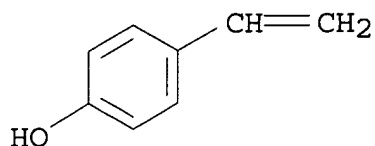
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CRN 2628-17-3

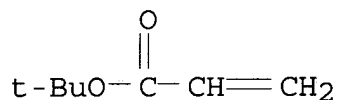
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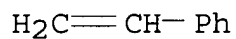
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CM 4

CRN 100-42-5

CMF C8 H8



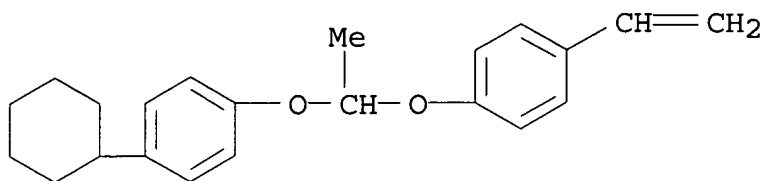
RN 849741-95-3 HCA

CN 2-Propenoic acid, 1-methyl-1-tricyclo[3.3.1.1^{3,7}]dec-1-ylethyl ester, polymer with 1-cyclohexyl-4-[1-(4-ethenylphenoxy)ethoxy]benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 849741-94-2

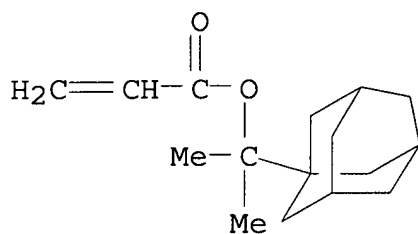
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CRN 300833-10-7

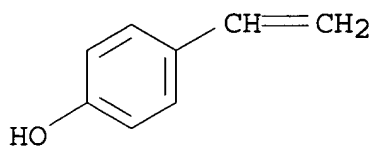
CMF C16 H24 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

ST amplified pos electron beam x ray EUV **resist** compnIT Electron beam **resists**

Photolithography

Positive photoresists**X-ray resists**

(pos.-working electron beam, x-ray, or EUV-sensitive
resist compn. and method for pattern formation using the
same)

IT 19600-49-8 197447-16-8 270563-96-7 365971-84-2 389859-76-1
(acid-generator in pos.-working electron beam, x-ray, or
EUV-sensitive **resist** compn.)

IT 849741-87-3P **849741-90-8P 849741-92-0P**
849741-95-3P 849741-97-5P 849741-99-7P 849742-01-4P
849742-03-6P 849742-06-9P 849743-95-9P
(resin in pos.-working electron beam, x-ray, or EUV-sensitive
resist compn.)

L22 ANSWER 3 OF 27 HCA COPYRIGHT 2006 ACS on STN

141:386387 **Photoresists** with reduced undesired outgassing.

Cameron, James F.; Trefonas, Peter; Barclay, George C. (Rohm and
Haas, Electronic Materials L.L.C., USA). PCT Int. Appl. WO
2004092831 A2 20041028, 52 pp. DESIGNATED STATES: W: AE, AG, AL,
AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI,
CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,
NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
APPLICATION: WO 2004-US11025 20040409. PRIORITY: US 2003-PV462409
20030409.

AB New **photoresists** are provided that can be applied and
imaged with reduced undesired outgassing and/or as thick coating
layers. Preferred **resists** of the invention are
chem.-amplified pos.-acting **resists** that contain
photoactive and resin components.

IT **782502-16-3 782502-17-4**
(**photoresists** with reduced undesired outgassing)

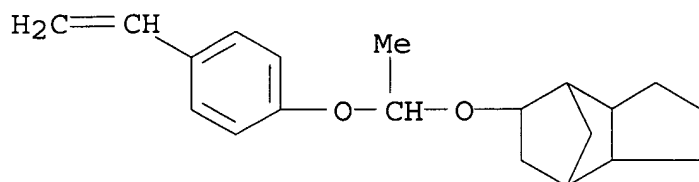
RN 782502-16-3 HCA

CN 2-Propenoic acid, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester,
polymer with 4-ethenylphenol and 5-[1-(4-
ethenylphenoxy)ethoxy]octahydro-4,7-methano-1H-indene (9CI) (CA
INDEX NAME)

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CRN 782502-15-2

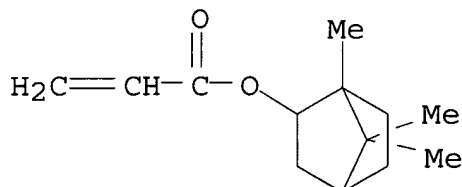
CMF C20 H26 O2



CM 2

CRN 128946-20-3

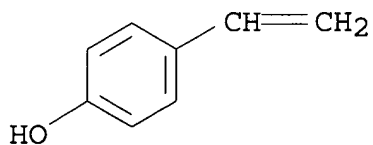
CMF C13 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



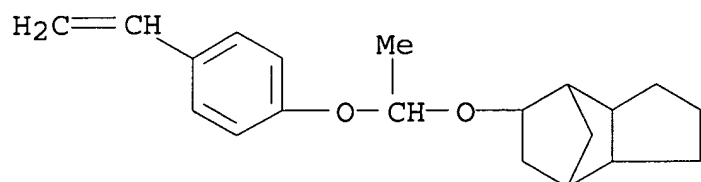
RN 782502-17-4 HCA

CN 2-Propenoic acid, octahydro-4,7-methano-1H-inden-5-yl ester, polymer with 4-ethenylphenol and 5-[1-(4-ethenylphenoxy)ethoxy]octahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

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CRN 782502-15-2

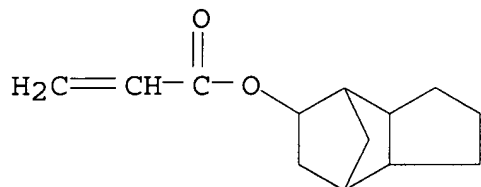
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CRN 7398-56-3

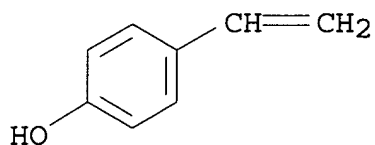
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CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos **photoresist** reduced outgassing thick coating chem

amplified

IT Positive **photoresists**

(**photoresists** with reduced undesired outgassing)

IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 84563-54-2

129674-22-2 158593-28-3 159296-87-4 177034-67-2 177034-75-2

194999-85-4 199432-82-1 200808-68-0 216258-44-5 257288-16-7

333758-18-2 402571-96-4 782502-11-8 782502-12-9 782502-13-0

782502-14-1 **782502-16-3 782502-17-4**

782502-18-5 782502-19-6 782502-20-9 782502-21-0

(**photoresists** with reduced undesired outgassing)

L22 ANSWER 4 OF 27 HCA COPYRIGHT 2006 ACS on STN

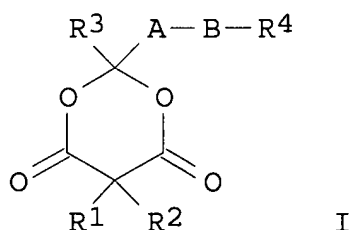
141:215640 Cyclic ethers and positive **resist** compositions.

Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai

Tokkyo Koho JP 2004238304 A2 20040826, 76 pp. (Japanese). CODEN:

JKXXAF. APPLICATION: JP 2003-27161 20030204.

GI



AB The cyclic ethers comprise I (R1, R2 = H, alkyl, cycloalkyl, aryl, aralkyl; R1 and R2 may form ring or substituent bonded to ring via double bond; R3, R4 = alkyl, cycloalkyl, aryl, aralkyl; A = alkylene; B = heteroatom). The compns. comprise acid-generating agents by irradiation of actinic ray or radiation, alkali developer-insol. polymers showing soly. for alkali developers by the action of acids, and I. The compns. are useful for manuf. of semiconductor devices and circuit boards and photofabrication. The compns. show good roundness of contact holes and rectangular profiles.

IT **297742-32-6P**

(cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)

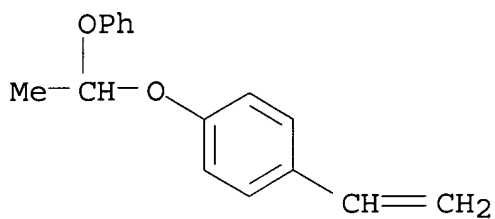
RN 297742-32-6 HCA

CN Phenol, 4-ethenyl-, acetate, polymer with 4-ethenylphenol and
1-ethenyl-4-(1-phenoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 151189-09-2

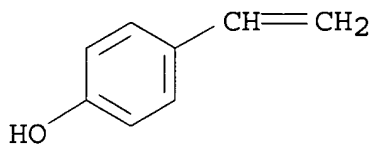
CMF C16 H16 O2



CM 2

CRN 2628-17-3

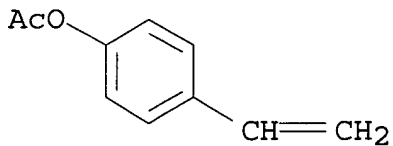
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM C07D319-06

ICS G03F007-004; G03F007-039; H01L021-027

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 24
- ST cyclic ether **resist** contact hole roundness; pos
resist cyclic ether rectangle profile
- IT Fluoropolymers, preparation
(acrylic; cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT Positive **photoresists**
(far-UV; cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT 138529-81-4 144317-44-2 177034-80-9 197447-16-8 209482-18-8
241806-75-7 258872-05-8 284474-28-8 300374-81-6 301664-71-1
389859-76-1 391232-40-9 398141-23-6 470482-89-4 506445-12-1
610301-34-3
(acid generators; cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT 744245-81-6P
(cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT 159296-87-4P 199432-82-1P 200808-68-0P 228101-60-8P
250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer 262617-13-0P, tert-Butyl norbornene-2-carboxylate-norbornene-tetrafluoroethylene copolymer
288620-13-3P 288620-15-5P 290300-33-3P **297742-32-6P**
326591-96-2P 391232-36-3P 398140-38-0P 398140-71-1P
398140-77-7P 398140-88-0P, tert-Butyl norbornenecarboxylate-maleic anhydride-2-methyl-2-adamantyl acrylate-norbornenelactone acrylate copolymer 398140-91-5P 430436-79-6P, (a)-Norbornene-tetrafluoroethylene copolymer 430436-81-0P 430437-14-2P
431062-12-3P 482609-97-2P 524699-47-6P 532989-17-6P
744246-25-1P, tert-Butyl norbornenecarboxylate-butyrolactone norbornenecarboxylate-maleic anhydride copolymer
(cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT 744245-82-7 744245-83-8 744245-84-9 744245-86-1 744245-88-3
744245-89-4 744245-93-0 744245-96-3 744246-00-2 744246-03-5
744246-06-8 744246-09-1 744246-12-6 744246-14-8 744246-16-0
744246-18-2
(cyclic ethers for pos. **resists** with good roundness of contact holes and rectangular profiles)
- IT 20233-08-3

(intermediates in cyclic ether prepn.; cyclic ethers for pos.
resists with good roundness of contact holes and
rectangular profiles)

IT 78-95-5, Chloromethyl methyl ketone 141-82-2, Malonic acid,
reactions 94805-33-1, Octanethiol
(reactants in cyclic ether prepn.; cyclic ethers for pos.
resists with good roundness of contact holes and
rectangular profiles)

L22 ANSWER 5 OF 27 HCA COPYRIGHT 2006 ACS on STN

139:330314 Chemically amplified positive-working **photoresist**
composition containing specific acetal polymer. Adams, Timothy G.;
Coley, Suzanne (Shipley Company, L.L.C., USA). Jpn. Kokai Tokkyo
Koho JP 2003295444 A2 **20031015**, 31 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2002-296564 20021009. PRIORITY: US
2001-PV327800 20011009.

AB The invention relates to a **photoresist** compn. contg. a
photoactive component and a polymer which has an alicyclic unit and
a photoacid-labile acetal unit. The polymer provides effective
imaging by sub-300 nm and sub-200 nm light.

IT **612835-42-4**
(acetal polymer in chem. amplified pos.-working
photoresist compn.)

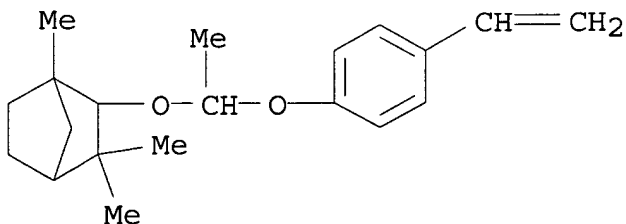
RN 612835-42-4 HCA

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with
1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene, 4-ethenylphenol
and 2-[1-(4-ethenylphenoxy)ethoxy]-1,3,3-
trimethylbicyclo[2.2.1]heptane (9CI) (CA INDEX NAME)

CM 1

CRN 612835-41-3

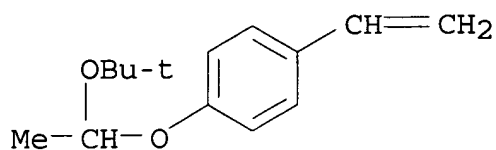
CMF C20 H28 O2



CM 2

CRN 169811-45-4

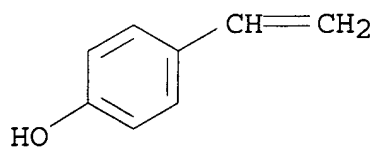
CMF C14 H20 O2



CM 3

CRN 2628-17-3

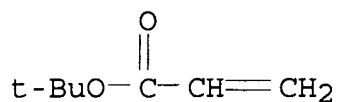
CMF C8 H8 O



CM 4

CRN 1663-39-4

CMF C7 H12 O2



IC ICM G03F007-039

ICS C08F216-38; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

ST chem amplified pos **photoresist** compn acetal polymer

IT Light-sensitive materials

Positive photoresists

(chem. amplified pos.-working **photoresist** compn. contg. specific acetal polymer)

IT **612835-42-4**

(acetal polymer in chem. amplified pos.-working **photoresist** compn.)

L22 ANSWER 6 OF 27 HCA COPYRIGHT 2006 ACS on STN

137:391086 Electron beam or x-ray sensitive positive-working **resist** composition containing specific acid-stable low molecular compound. Sasaki, Tomoya; Mizutani, Kazuyoshi; Shirakawa, Hiroshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002341538 A2 **20021127**, 42 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-142185 20010511.

AB The title compn. contains an electron beam or x-ray sensitive acid-generator, a resin increasing the soly. towards an alkali developer by reacting with the acid, a low-mol. acid-stable compd., and a solvent, wherein the acid stable compd. has a residual group of a compd. with smaller ionization potential (Ip) than p-ethylphenol. The **resist** shows the high sensitivity and high resoln. and provides the good PED stability.

IT **297742-32-6P**, p-Hydroxystyrene-4-(1-phenoxyethoxy)styrene-p-acetoxystyrene copolymer

(resin; electron beam or x-ray sensitive pos.-working **resist** compn.)

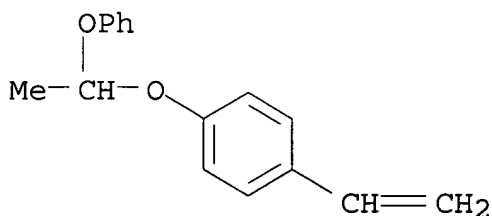
RN 297742-32-6 HCA

CN Phenol, 4-ethenyl-, acetate, polymer with 4-ethenylphenol and 1-ethenyl-4-(1-phenoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 151189-09-2

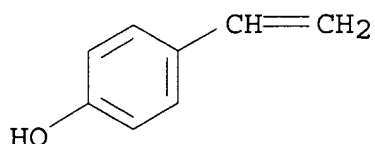
CMF C16 H16 O2



CM 2

CRN 2628-17-3

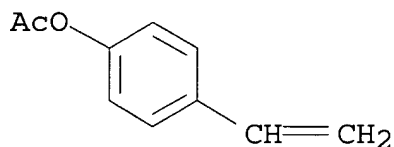
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electron beam x ray pos **resist** compnIT Electron beam **resists**X-ray **resists**(electron beam or x-ray sensitive pos.-working **resist** compn.)

IT 75-59-2, Tetramethylammonium hydroxide 945-51-7, Diphenyl sulfoxide 2049-95-8, tert-Amyl benzene 3744-08-9, Triphenylsulfonium iodide 7664-93-9, Sulfuric acid, reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide 26120-85-4, Pentachlorobenzenesulfonyl chloride 249300-51-4, Iodonium,bis[4-(1,1-dimethylpropyl)phenyl]- (acid-generator; electron beam or x-ray sensitive pos.-working **resist** compn.)

IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate

(acid-generator; electron beam or x-ray sensitive pos.-working
resist compn.)

IT 93-03-8P 773-99-9P, 1-Naphthaleneethanol 776-99-8P 1136-81-8P
1517-72-2P 1929-87-9P 2876-78-0P 3840-31-1P 4780-79-4P,
1-Naphthalenemethanol 5653-67-8P 19351-91-8P 24463-15-8P,
1-Pyrenemethanol 53560-25-1P 91909-27-2P 92324-44-2P
263237-56-5P

(acid-stable low-mol. wt. compd.; electron beam or x-ray
sensitive pos.-working **resist** compn.)

IT 144317-44-2 153698-46-5 197447-16-8 258341-98-9 279244-39-2
389859-76-1 475642-50-3 476274-42-7

(acids-generator; electron beam or x-ray sensitive pos.-working
resist compn.)

IT 270563-93-4

(electron beam or x-ray sensitive pos.-working **resist**
compn.)

IT 24979-70-2P, p-Hydroxystyrene homopolymer 24979-74-6P,
p-Hydroxystyrene-styrene copolymer 129674-22-2P,
p-Hydroxystyrene-p-(tert-Butoxycarbonyloxy)styrene copolymer
159296-87-4P, p-Hydroxystyrene-tert-butyl acrylate copolymer
177034-67-2P, p-Hydroxystyrene-p-(1-ethoxyethoxy)styrene-styrene
copolymer 288620-15-5P **297742-32-6P**,
p-Hydroxystyrene-4-(1-phenoxyethoxy)styrene-p-acetoxystyrene
copolymer 325143-38-2P, p-Hydroxystyrene-p-(1-ethoxyethoxy)styrene-
tert-butyl acrylate copolymer

(resin; electron beam or x-ray sensitive pos.-working
resist compn.)

L22 ANSWER 7 OF 27 HCA COPYRIGHT 2006 ACS on STN

137:54610 Positive **resist** composition sensitive to electron
beam or X-ray. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan).
Jpn. Kokai Tokkyo Koho JP 2002174894 A2 **20020621**, 62 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-372986 20001207.

AB The **resist** compn. contains (A) polymers having a repeating
unit -CH₂CR₁(A₁SO₂SO₂R₂)- [R₁ = H, halo, cyano, (substituted) alkyl
or haloalkyl; R₂ = (substituted) alkyl, cycloalkyl, aryl, or
aralkyl; A₁ = none, (substituted) alkylene, alkenylene,
cycloalkylene, arylene, -OCOX₁-, -COOX₂-, -CONX₃X₄-; X₁₋₂, X₄ =
(substituted) alkylene, alkenylene, cycloalkylene, arylene; X₁₋₂
and/or X₄ may contain CO, COO, amido, urethane, or ureido structure;
X₃ = H, (substituted) alkyl, cycloalkyl, aralkyl, aryl] and (B)
acid-decomposable dissoln.-inhibiting compd. with mol. wt.

≤ 3000 . The **resist** compn. has high sensitivity and resoln., and shows good patterning profiles. The **resist** compn. is useful for microprocessing of semiconductor devices.

IT 403656-03-1P

(electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)

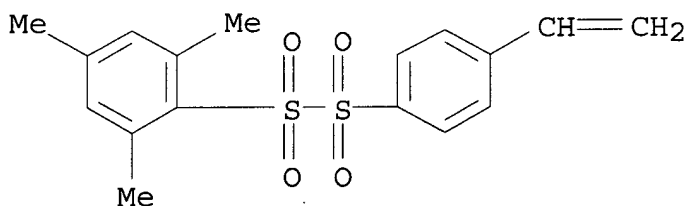
RN 403656-03-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenyl 2,4,6-trimethylphenyl disulfone (9CI) (CA INDEX NAME)

CM 1

CRN 403656-02-0

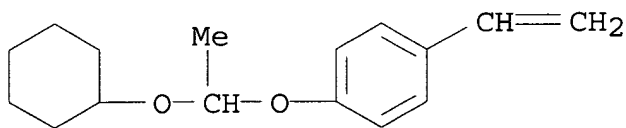
CMF C17 H18 O4 S2



CM 2

CRN 190434-67-4

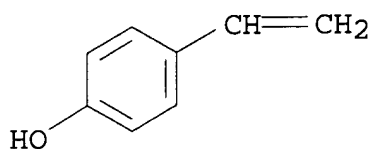
CMF C16 H22 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



- IC ICM G03F007-004
ICS G03F007-004; C08K005-00; C08L057-10; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
- ST sensitivity resoln pos **resist** electron beam X ray
- IT Positive **photoresists**
(electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)
- IT **Resists**
(pos.-working; electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)
- IT 153698-54-5 153698-58-9 153698-63-6 153698-65-8 177983-92-5
438491-43-1
(dissoln.-inhibiting compd.; electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)
- IT 403656-00-8P 403656-01-9P **403656-03-1P** 438491-35-1P
438491-38-4P 438491-39-5P 438491-40-8P 438491-41-9P
438491-42-0P
(electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)
- L22 ANSWER 8 OF 27 HCA COPYRIGHT 2006 ACS on STN
- 136:393268 Positive-working **resist** compositions containing sulfonic acid generators. Kodama, Kuniyuki; Nishiyama, Fumiyuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002139838 A2 **20020517**, 44 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-332802 20001031.
- AB The compns., which show high sensitivity, high resoln., and improved process latitude, and give **resist** pattern with good rectangular profile, contain (a) compds. which generate sulfonic acids having alkyl group substituted with ≥ 1 F upon irradiation with actinic ray and (b) resins having a repeating unit $[\text{CH}_2\text{CHR}_1(\text{C}_6\text{H}_4\text{OCR}_2\text{R}_3\text{OR})]$ [$\text{R}_1 = \text{H}$, alkyl, halo; $\text{R}_2, \text{R}_3 = \text{H}$, alkyl; $\text{R} =$ (un)substituted $\text{C}_{\geq 5}$ alicyclic hydrocarbyl, (un)substituted $\text{C}_{\geq 6}$ aryl, (un)substituted $\text{C}_{\geq 4}$ heterocyclyl, $(\text{CH}_2)_n\text{XR}_4$]

(n = 1-3; X = direct bond, linking group; R4 = any group given for R); ≥ 2 of R, R2, and R3 may be bonded together to form a ring] which are decompd. by acids and show increased sol. in an alk. developer. The compns. may addnl. contain (c) dissoln. inhibitors with mol. wt. ≤ 3000 which have acid-decomposable group and show increased dissoln. rate in an alk. developer upon action of acids, (d) N-contg. basic compds. and/or basic onium salts, and (e) F-contg. surfactants and/or silicone surfactants.

IT 199432-81-0P

(pos.-working **resist** compns. contg.

fluoroalkanesulfonic acid generators and poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)

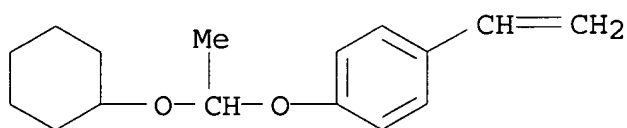
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

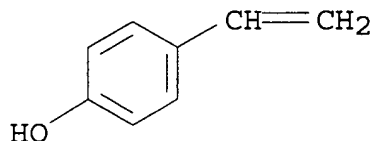
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS C08F012-24; C08K005-42; C08L025-18; C08L083-04; G03F007-004; H01L021-027

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos **resist** fluoroalkanesulfonic acid generator
polyhydroxystyrene ether
- IT Positive **photoresists**
(UV, far-; pos.-working **resist** compns. contg.
fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)
- IT Electron beam **resists**
Resists
(pos.-working; pos.-working **resist** compns. contg.
fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)
- IT 153698-63-6
(dissoln. inhibitor; pos.-working **resist** compns. contg.
fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)
- IT 3744-08-9P, Triphenylsulfonium iodide
(in prepn. of photoacid generator; pos.-working **resist**
compns. contg. fluoroalkanesulfonic acid generators and
poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
- IT 71-43-2, Benzene, reactions 945-51-7, Diphenyl sulfoxide
1763-23-1, Perfluoro-n-octanesulfonic acid 4270-70-6,
Triphenylsulfonium chloride 25628-17-5 52908-55-1 194999-85-4
(in prepn. of photoacid generator; pos.-working **resist**
compns. contg. fluoroalkanesulfonic acid generators and
poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
- IT 14159-45-6P 39153-56-5P 138529-81-4P 138529-84-7P
144089-15-6P, Triphenylsulfonium perfluorooctanesulfonate
153698-46-5P 179419-32-0P 193345-23-2P 197447-16-8P
241806-75-7P 252937-66-9P 297742-41-7P 338445-29-7P
338445-31-1P 365971-70-6P 365971-84-2P 365971-85-3P
376357-77-6P 376357-89-0P 389859-76-1P 405284-05-1P
425670-82-2P 425670-97-9P
(pos.-working **resist** compns. contg.
fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)
- IT 66003-78-9 144317-44-2 213740-80-8 241806-76-8 258872-05-8
284474-28-8 312386-77-9 391232-40-9 398141-17-8 398141-18-9
414911-27-6 414911-28-7 414911-33-4 425670-52-6 425670-55-9
425670-64-0 425670-70-8 425670-73-1 425670-76-4
(pos.-working **resist** compns. contg.

fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)

IT 102-82-9P, Tri-n-butylamine 108-24-7DP, Acetic anhydride, reaction products with poly(p-hydroxystyrene) ethers 109-53-5DP, Isobutyl vinyl ether, reaction products with Bu acrylate-hydroxystyrene copolymer 926-02-3DP, tert-Butyl vinyl ether, reaction products with poly(hydroxystyrene) and cyclohexaneethanol 3040-44-6P, 1-Piperidineethanol 4442-79-9DP, Cyclohexaneethanol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether 24979-70-2DP, VP 8000, reaction products with cyclohexaneethanol, tert-Bu vinyl ether, and 147625-42-1P, Poly(p-hydroxystyrene) tert-butyl carbonate 158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 159296-87-4DP, tert-Butyl acrylate-p-vinylphenol copolymer, reaction products with iso-Bu vinyl ether 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer **199432-81-0P** 199432-82-1P, p-Hydroxystyrene-p-(1-isobutoxyethoxy)styrene copolymer 200808-68-0P, tert-Butyl acrylate-p-hydroxystyrene-styrene copolymer 287381-58-2P 288620-15-5P, p-(1-Benzoyloxyethoxy)styrene-p-hydroxystyrene copolymer 289706-85-0P, p-Acetoxystyrene-p-hydroxystyrene-p-(1-phenethyloxyethoxy)styrene copolymer 325143-37-1P, p-tert-Butylstyrene-p-[1-(cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene copolymer 326592-04-5P 398457-05-1P 425671-10-9P, p-Acetoxystyrene-p-[1-(4-tert-butylcyclohexyl)carboxyethoxy]styrene-p-hydroxystyrene copolymer (pos.-working **resist** compns. contg.

fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)

IT 304-88-1, N-Benzoyl-N-phenylhydroxylamine 484-47-9, 2,4,5-Triphenylimidazole 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 19600-49-8, Triphenylsulfonium acetate (pos.-working **resist** compns. contg.

fluoroalkanesulfonic acid generators and poly(hydroxystyrenes)
having alicyclic or (hetero)arom. group)

L22 ANSWER 9 OF 27 HCA COPYRIGHT 2006 ACS on STN

136:301776 Chemical amplification positive working **resist** material. Hatakeyama, Jun (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002099090 A2 **20020405**, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-210657 20010711. PRIORITY: JP 2000-218490 20000719.

AB The chem. amplification pos. working **resist** material used

for electron beam and soft x-ray exposure comprises ≥ 1 hardly alk. sol. resin having ≥ 2 acid unstable group replacing H of a phenolic OH or carboxy group of an alk. sol. base polymer, wherein one of the acid unstable group is acetal or ketal group and the other is a tert hydrocarbon group. The chem. amplification pos. working **resist** material showed excellent stability in vacuum after the exposure.

IT 199432-81-0

(chem. amplification pos. working **resist** material)

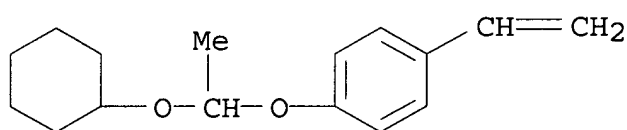
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

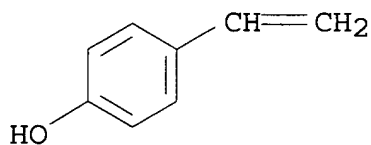
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST chem amplification pos working **resist** material

IT Electron beam **resists**

X-ray resists(chem. amplification pos. working **resist** material)

IT 125325-82-8 158593-28-3 159296-87-4 177034-75-2
199432-81-0 218796-79-3 288620-15-5 301153-46-8
325143-38-2 326925-68-2 338438-44-1 406909-41-9 406909-42-0
406909-43-1 406909-44-2 406909-45-3

(chem. amplification pos. working **resist** material)

IT 266308-64-9

(photoacid; chem. amplification pos. working **resist** material)

IT 102-71-6, Triethanolamine, uses

(solvent; chem. amplification pos. working **resist** material)

L22 ANSWER 10 OF 27 HCA COPYRIGHT 2006 ACS on STN

136:239102 Positive-working **photoresist** compositions for
patterning by treatment with electron beam or x-ray. Aogo,
Toshiaki; Adegawa, Yutaka (Fuji Photo Film Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 2002072483 A2 **20020312**, 63 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-267329 20000904.

AB The compns. contain polymers with structural repeating units that
contain groups which generate acid on treatment with electron beam
or x-ray. Preferable structural repeating units are given as
Markush structures. Optionally, the compns. also contain compds.
that generate acid on irradiation with electron beam or x-ray.
Photoresists with excellent profiles and high sensitivity
are obtained.

IT **403656-03-1**(x-ray- or electron beam-working pos. **photoresist**
compns. giving patterns with excellent profiles)

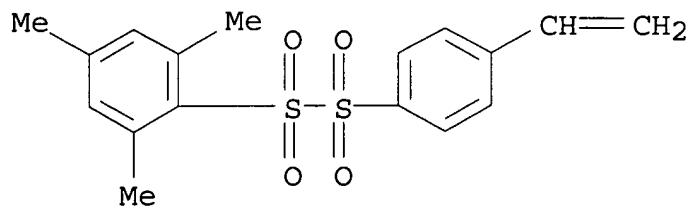
RN 403656-03-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-
ethenylbenzene and 4-ethenylphenyl 2,4,6-trimethylphenyl disulfone
(9CI) (CA INDEX NAME)

CM 1

CRN 403656-02-0

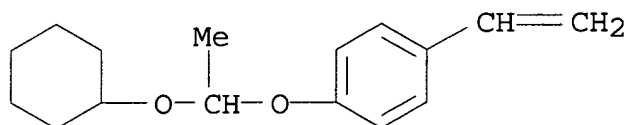
CMF C17 H18 O4 S2



CM 2

CRN 190434-67-4

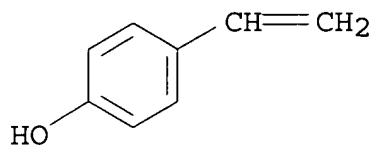
CMF C16 H22 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039
 ICS C08F212-14; C08F220-10; C08F220-56; C08K005-00; C08L025-18;
 G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38

ST pos **photoresist** electron beam patterning; x ray patterning
 pos **photoresist** compn

IT Positive **photoresists**

(x-ray- or electron beam-working pos. **photoresist** compns. giving patterns with excellent profiles)

IT 41580-58-9 153698-46-5 177786-98-0 197447-16-8 224568-31-4
251463-24-8 258341-98-9
(acid generator; x-ray- or electron beam-working pos. **photoresist** compns. giving patterns with excellent profiles)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with hydrolyzed butoxystyrene-styryltolyldisulfone copolymer 403655-99-2DP, hydrolyzed (ethers)
(x-ray- or electron beam-working pos. **photoresist** compns. giving patterns with excellent profiles)

IT 403656-00-8 403656-01-9 **403656-03-1** 403656-05-3
403656-06-4 403656-09-7 403656-10-0 403656-11-1 403656-14-4
403656-18-8
(x-ray- or electron beam-working pos. **photoresist** compns. giving patterns with excellent profiles)

L22 ANSWER 11 OF 27 HCA COPYRIGHT 2006 ACS on STN
136:93483 Positive-working **resist** composition. Kodama, Kunihiro; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002006480 A2 **20020109**, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-188077 20000622.

AB The pos.-working **resist** compn. comprises (a) a resin which decomp. upon contacting an acid, resulting in increasing its soly. in an alkali developer, (b1) ≥ 1 photoacid having ≥ 2 sulfonium cation structure, and (b2) ≥ 1 photoacid having a bis(sulfonyl)diazomethane structure. The title compn. increased the soly. discrimination between exposed and nonexposed areas.

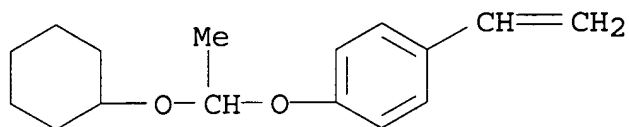
IT **199432-81-0P 297742-32-6P**
(resin; resins and photoacids contained in pos.-working **resist** compn.)

RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

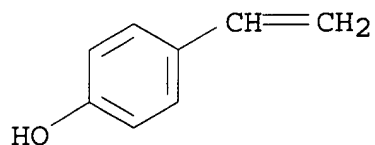
CRN 190434-67-4
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



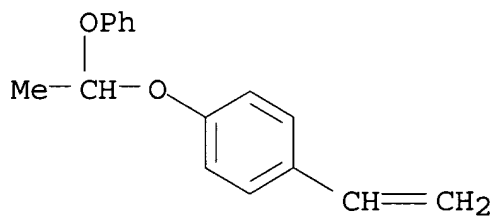
RN 297742-32-6 HCA

CN Phenol, 4-ethenyl-, acetate, polymer with 4-ethenylphenol and
1-ethenyl-4-(1-phenoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 151189-09-2

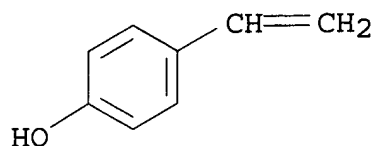
CMF C16 H16 O2



CM 2

CRN 2628-17-3

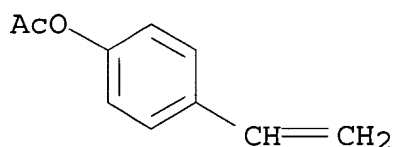
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-004

ICS G03F007-004; C08F002-44; C08F291-00; C08K005-00; C08K005-16;
C08K005-41; C08L101-02; C09K003-00; H01L021-027; C07C381-12;
C07C381-14

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 35, 38

ST **photoresist** compn photoacid resinIT **Photoresists**

(resins and photoacids contained in pos.-working **resist**
compn.)

IT	39153-56-5	138529-81-4	138529-84-7	138529-87-0	177786-98-0
	195072-47-0	214208-12-5	228871-07-6	270563-96-7	338445-31-1
	343629-55-0	387382-50-5	387382-51-6	387382-53-8	387382-55-0

(photoacid; resins and photoacids contained in pos.-working
resist compn.)

IT	129674-22-2P	158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-
	hydroxystyrene copolymer	159296-87-4P 199432-81-0P
	199432-82-1P	200808-68-0P, tert-Butyl acrylate-p-hydroxystyrene-
	styrene copolymer	288620-15-5P, p-(1-Benzyloxyethoxy)styrene-p-
	hydroxystyrene copolymer	289706-85-0P, p-Acetoxystyrene-p-(1-
	benzyloxyethoxy)styrene-p-hydroxystyrene copolymer	
	297742-32-6P	372968-15-5P 387382-45-8P 387382-48-1P
	387382-49-2P	

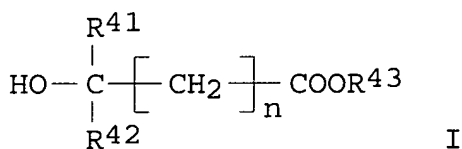
(resin; resins and photoacids contained in pos.-working
resist compn.)

L22 ANSWER 12 OF 27 HCA COPYRIGHT 2006 ACS on STN

134:49216 Agent for reducing substrate dependence of **resist**.

Urano, Fumiyoshi; Katano, Naoki; Kiryu, Tomoko (Wako Pure Chemical Industries, Ltd., Japan). Eur. Pat. Appl. EP 1059563 A1
20001213, 52 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-112206 20000607. PRIORITY: JP 1999-163191 19990610; JP 1999-285662 19991006.

GI



AB The present invention relates to an agent for reducing substrate dependence useful as an ingredient of a **resist** compn. used for prepn. of semiconductor devices and the like, which comprises a compd. I (R⁴¹ = H, or Me; R⁴² = H, Me, Et, or Ph group; R⁴⁵ = a straight chained, branched or cyclic C1-6 alkyl group; and n = 0, or 1).

IT **287381-51-5**

(agent for reducing substrate dependence of **resist**)

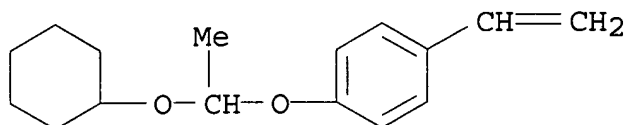
RN 287381-51-5 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

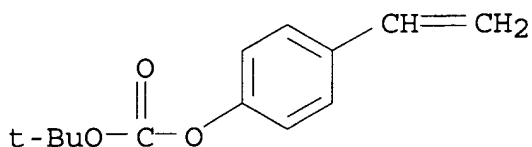
CMF C16 H22 O2



CM 2

CRN 87188-51-0

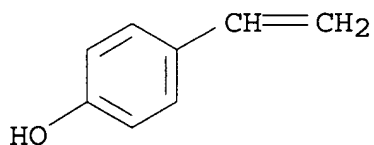
CMF C13 H16 O3



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST **photoresist** substrate dependence reducing agentIT **Photoresists**(agent for reducing substrate dependence of **resist**)

IT Borophosphosilicate glasses

(agent for reducing substrate dependence of **resist**)IT 96-35-5, Methyl glycolate 97-64-3, Ethyl lactate 102-82-9,
Tri-n-butylamine 121-44-8, Triethylamine, uses 623-50-7, Ethyl

glycolate 1116-76-3, Tri-n-octylamine 2052-49-5,
Tetra-n-butylammonium hydroxide 2420-27-1 5405-41-4, Ethyl
3-hydroxybutyrate 11105-01-4, Silicon nitride oxide 12033-89-5,
Silicon nitride, uses 13891-29-7 14159-45-6 19293-63-1,
Dicyclohexylmethylamine 25583-20-4, Titanium nitride 52089-54-0,
Ethyl 2-hydroxybutyrate 84540-57-8, Propyleneglycol
monomethylether acetate 123589-22-0 138529-81-4,
Bis(cyclohexylsulfonyl)diazomethane 138529-83-6 138529-84-7,
Bis(1,1-dimethylethylsulfonyl)diazomethane 151225-43-3
158593-28-3 171429-60-0, p-1-Ethoxyethoxystyrene-p-tert-
butoxystyrene-p-hydroxystyrene copolymer 177034-75-2 194996-88-8
249890-04-8 **287381-51-5** 287381-58-2

(agent for reducing substrate dependence of **resist**)

L22 ANSWER 13 OF 27 HCA COPYRIGHT 2006 ACS on STN

133:274235 Radiation sensitive positive-working **resist** resin
composition. Tan, Shiro; Aogo, Toshiaki; Fujiomori, Toru (Fuji
Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000258913
A2 **20000922**, 33 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1999-60286 19990308.

AB The invention relates to a radiation-sensitive pos.-working
resist resin compn. contg.: (A) a polymer increasing soly.
towards an alkali developer reacting with an acid; (B) a photoacid
generator; and (C) an acetal compd. The compn. contg. the acetal is
suitable for use in a semiconductor device fabrication and provides
high sensitivity and the high resoln.

IT **297742-32-6P**, p-Hydroxystyrene-p-(1-phenylethoxy)styrene-p-
acetoxystyrene copolymer
(polymer in radiation-sensitive pos.-working **resist**
resin compn.)

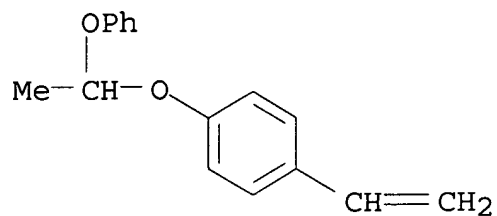
RN 297742-32-6 HCA

CN Phenol, 4-ethenyl-, acetate, polymer with 4-ethenylphenol and
1-ethenyl-4-(1-phenoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 151189-09-2

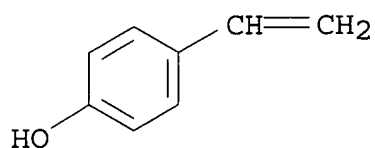
CMF C16 H16 O2



CM 2

CRN 2628-17-3

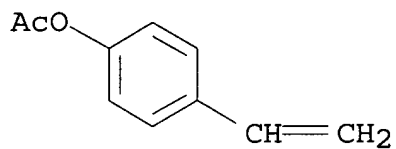
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-039

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation sensitive pos **resist** resin compn

IT Light-sensitive materials

Photoresists(radiation sensitive pos.-working **resist** resin compn.)

IT 100-51-6, Benzenemethanol, reactions 926-02-3, tert-Butyl vinyl

ether

(acetal in radiation-sensitive pos.-working **resist**
resin compn.)

IT 122-71-4P 23556-90-3P 82337-98-2P 92565-85-0P 297742-33-7P
297742-34-8P 297742-36-0P 297742-38-2P

(acetal in radiation-sensitive pos.-working **resist**
resin compn.)

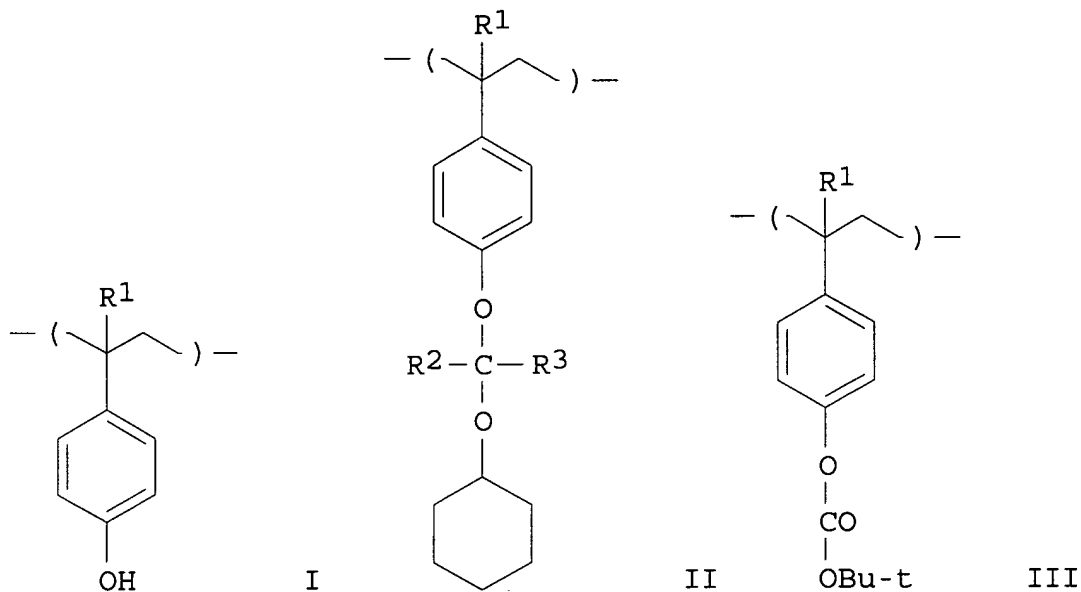
IT 197447-16-8P 224568-31-4P 297742-41-7P
(photoacid generator in radiation-sensitive pos.-working
resist resin compn.)

IT 24979-70-2P, 4-Hydroxystyrene homopolymer 24979-74-6P,
p-Hydroxystyrene-styrene copolymer 129674-22-2P,
p-Hydroxystyrene-p-tert-butoxycarbonyloxy styrene copolymer
159296-87-4P, p-Hydroxystyrene-tert-butyl acrylate copolymer
177034-67-2P, p-Hydroxystyrene-p-(1-ethoxyethoxy)styrene-styrene
copolymer 289706-85-0P, p-Hydroxystyrene-p-(1-
benzyloxyethoxy)styrene-p-acetoxystyrene copolymer
297742-32-6P, p-Hydroxystyrene-p-(1-phenylethoxy)styrene-p-
acetoxystyrene copolymer
(polymer in radiation-sensitive pos.-working **resist**
resin compn.)

L22 ANSWER 14 OF 27 HCA COPYRIGHT 2006 ACS on STN

133:230379 Radiation-sensitive chemically amplified positive-working
resist resin composition. Kobayashi, Eiichi; Yokoyama,
Kenichi; Nishimura, Yukio (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo
Koho JP 2000241980 A2 **20000908**, 22 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1999-362868 19991221. PRIORITY: JP
1998-364905 19981222.

GI



AB The radiation-sensitive chem. amplified pos.-working **resist** resin compn. contains a copolymer having repeating unit I (R1 = H, methyl) and II (R1-2 = H, methyl; R3 = Me, ethyl), a copolymer having repeating unit III (R1 = H, methyl), and a photoacid generator. The addn. of the resins to the compn. provides the excellent sensitivity, resln., and pattern shapes.

IT 199432-81-0P 287381-51-5P 291282-95-6P
291282-96-7P

(radiation-sensitive chem. amplified pos.-working **resist** resin compn.)

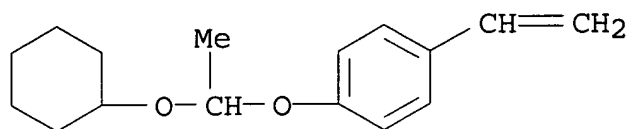
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

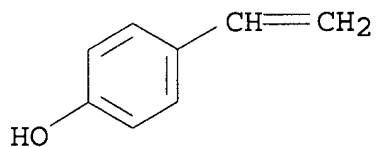
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



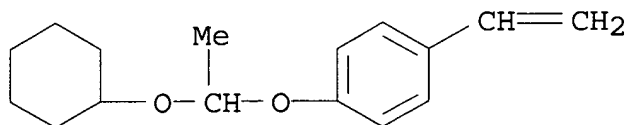
RN 287381-51-5 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with
1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol
(9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

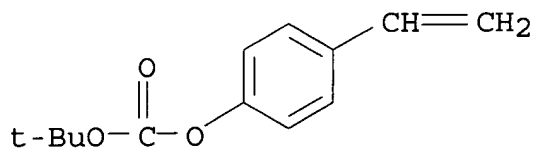
CMF C16 H22 O2



CM 2

CRN 87188-51-0

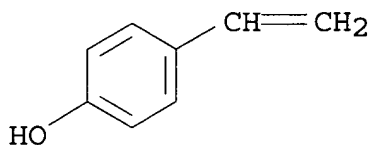
CMF C13 H16 O3



CM 3

CRN 2628-17-3

CMF C8 H8 O



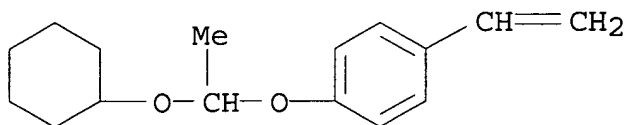
RN 291282-95-6 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

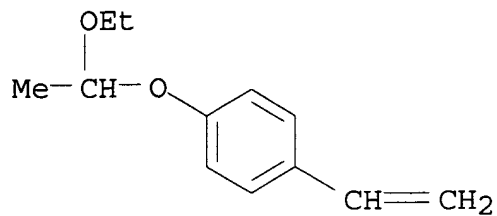
CMF C16 H22 O2



CM 2

CRN 157057-20-0

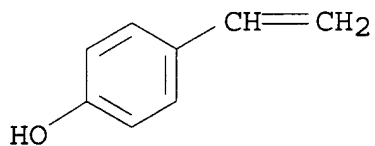
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



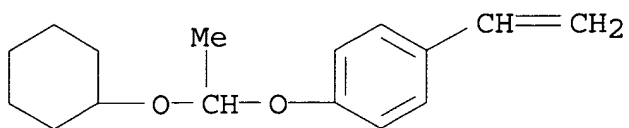
RN 291282-96-7 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

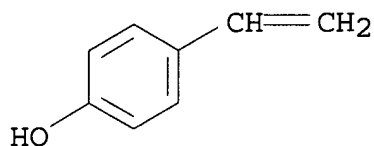
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



CM 3

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

IC ICM G03F007-039

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation chem amplified pos **resist** compnIT **Photoresists**(chem. amplified, pos.-working; radiation-sensitive chem. amplified pos.-working **resist** resin compn.)

IT 24979-74-6P, 4-Vinylphenol-styrene copolymer 95418-60-3P,
 4-tert-Butoxystyrene homopolymer 174476-25-6P,
 4-Acetoxystyrene-tert-butyl acrylate copolymer 291282-97-8DP,
 4-tert-Butoxystyrene-acrylonitrile copolymer, reaction products with
 di-tert-Bu carbonate

(radiation-sensitive chem. amplified pos.-working **resist** resin compn.)

IT 34619-03-9DP, Di-tert-butyl carbonate, 4-tert-Butoxystyrene-
 acrylonitrile copolymer 95418-60-3DP, 4-tert-Butoxystyrene
 homopolymer, reaction products with di-tert-Bu carbonate

199432-81-0P 287381-51-5P 291282-95-6P**291282-96-7P**(radiation-sensitive chem. amplified pos.-working **resist** resin compn.)

L22 ANSWER 15 OF 27 HCA COPYRIGHT 2006 ACS on STN

133:215450 Positive-working photosensitive composition containing
 silicone. Sakaguchi, Shinji (Fuji Photo Film Co., Ltd., Japan).
 Jpn. Kokai Tokkyo Koho JP 2000235264 A2 **20000829**, 49 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-143614 19990524.
PRIORITY: JP 1998-354878 19981214.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The invention relates to a pos.-working photosensitive compn. contg.; (a) a water-insol. and alkali-sol. polymer having repeating unit I or II(X = -C=O, H, hydrocarbon, etc.; R'-'''' = OH, alkyl, cycloaralkyl, etc.; R0 = H, halo, hydrocarbon; r, s, t = 1-3 integer; u, v = 1, 2; l, m, n, q \geq 0 integer; p > 0 integer; R $_{\alpha}$ - γ = single bond, -(CH₂)_k-(Z $_{\alpha}$)-R $_{\delta}$; Z $_{\alpha}$ = -COC-, -O-, -N(R $_{\epsilon}$)-; R $_{\delta}$ = single bond, C1-12 alkylene; arylene, aralkyl; R $_{\epsilon}$ = H, C1-10 alkyl; k = \geq 0 integer; j = 0, 1); (b) a compd. generating an acid upon irradiation of actinic or radioactive ray; and (c) a polymer, which increases the soly. towards an alkali developer at the presence of an acid, having repeating unit -(C(R1)(R2)-C(R3)(R4-(G)f))a-, -(C(R5)(R6)-C(R7)(R8-(Q)g))b- (R1-3,5-7,9-11 = H, halo, alkyl, etc.; R4,9 = single bond, 2-5 valent specific aryl, amide group) and -(C(R9)(R10)-C(R11)(R12))c- and acid-sensitive group, and (d) a nitrogen contg. cyclic compd. and/or an aliph. amine having a carboxylic substituent. The compn. provides the high sensitivity and the high resolu. and is suitable for use in a semiconductor device prodn.

IT 289706-88-3

(pos.-working photosensitive compn.)

RN 289706-88-3 HCA

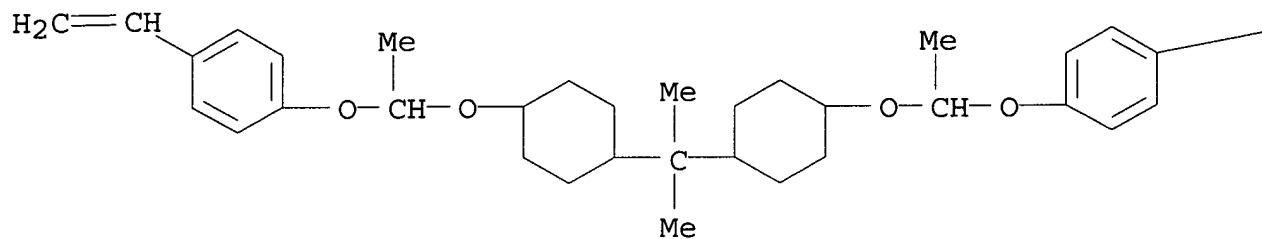
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene, 4-ethenylphenol and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

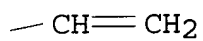
CRN 206861-56-5

CMF C35 H48 O4

PAGE 1-A



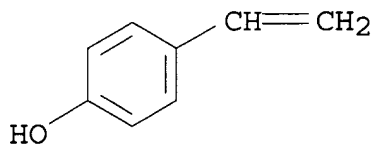
PAGE 1-B



CM 2

CRN 2628-17-3

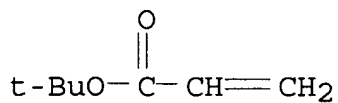
CMF C8 H8 O



CM 3

CRN 1663-39-4

CMF C7 H12 O2



CM 4

CRN 100-42-5
CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

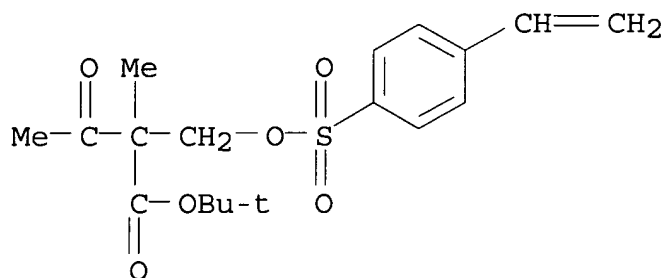
- IC ICM G03F007-075
ICS C08L083-06; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
- IT **Photoresists**
(pos.-working photosensitive compn. contg. silicone)
- IT 109-12-6, 2-Aminopyrimidine 119-65-3, Isoquinoline 260-94-6, Acridine 504-29-0, 2-Aminopyridine 534-85-0, 2-Aminodiphenylamine 580-20-1, 7-Hydroxyquinoline 607-31-8, 4-Methoxyquinoline 611-64-3, 9-Methylacridine 620-08-6, 4-Methoxypyridine 670-95-1, 4-Phenylimidazole 822-36-6, 4-Methylimidazole 18123-20-1, 4-Hydroxyacridine 23687-25-4, 4-Aminoisoquinoline 31401-45-3, 4-Dimethylaminopyrimidine 36631-19-3, Triphenyl imidazole 177034-67-2 287925-54-6
287925-56-8 288620-13-3 288620-15-5 289706-73-6 289706-75-8
289706-76-9 289706-79-2 289706-80-5 289706-81-6 289706-82-7
289706-83-8 289706-84-9 289706-85-0 289706-86-1 289706-87-2
289706-88-3 289706-90-7
(pos.-working photosensitive compn.)
- L22 ANSWER 16 OF 27 HCA COPYRIGHT 2006 ACS on STN
133:200844 Positive-working **photoresist** composition containing polymer having sulfonate group. Sato, Kenichiro; Kodama, Kunihiro; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000231194 A2 **20000822**, 47 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1999-240600 19990826. PRIORITY: JP 1998-347193 19981207.
- AB The title **photoresist** compn. contains a compd. which generates an acid by irradiation with activating ray or radiation and a resin which contains a repeating unit having SO_2OR group [R = alkyl, cycloalkyl, alkenyl (these groups may be substituted)] and of which the dissoln. rate to alk. developing solns. increases by the action of acid. The compn. shows high sensitivity toward far UV rays, esp. KrF or ArF excimer laser beams and good developability and provides high resoln. patterns with improved coarse-dense dependence.

IT 289040-34-2D, hydrolyzed
 (photoresist compn. contg. alkali-sol. polymer with
 sulfonate group)
 RN 289040-34-2 HCA
 CN Butanoic acid, 2-[[[(4-ethenylphenyl)sulfonyl]oxy]methyl]-2-methyl-3-
 oxo-, 1,1-dimethylethyl ester, polymer with 1-[1-
 (cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol (9CI)
 (CA INDEX NAME)

CM 1

CRN 220406-43-9

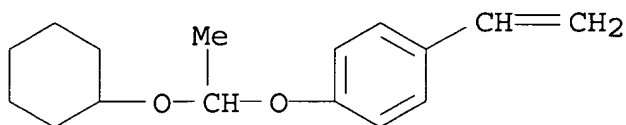
CMF C18 H24 O6 S



CM 2

CRN 190434-67-4

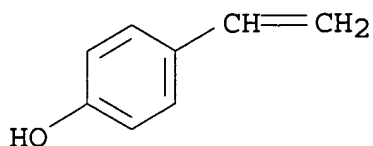
CMF C16 H22 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039
 ICS C08F012-30; C08F020-38; C08F020-56; G03F007-004; G03F007-027;
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38

ST UV **resist** polymer sulfonate group; acid generator
photoresist

IT **Photoresists**
 (UV; **photoresist** compn. contg. alkali-sol. polymer with
 sulfonate group)

IT 289040-02-4DP, hydrolyzed 289040-57-9P
 (**photoresist** compn. contg. alkali-sol. polymer with
 sulfonate group)

IT 66003-78-9, Triphenylsulfonium triflate 220930-80-3 258341-99-0
 289040-03-5D, hydrolyzed 289040-04-6D, hydrolyzed 289040-06-8D,
 hydrolyzed 289040-08-0D, hydrolyzed 289040-09-1D, hydrolyzed
 289040-11-5D, hydrolyzed 289040-13-7D, hydrolyzed 289040-16-0D,
 hydrolyzed 289040-19-3D, hydrolyzed 289040-20-6D, hydrolyzed
 289040-22-8D, hydrolyzed 289040-24-0D, hydrolyzed 289040-25-1D,
 hydrolyzed 289040-27-3D, hydrolyzed 289040-30-8D, hydrolyzed
 289040-31-9D, hydrolyzed 289040-33-1D, hydrolyzed
289040-34-2D, hydrolyzed 289040-37-5D, hydrolyzed
 289040-40-0D, hydrolyzed 289040-42-2D, hydrolyzed 289040-44-4D,
 hydrolyzed 289040-46-6D, hydrolyzed 289040-48-8D, hydrolyzed
 289040-50-2D, hydrolyzed 289040-52-4D, hydrolyzed 289040-56-8D,
 hydrolyzed 289040-58-0 289040-59-1 289040-60-4 289040-61-5
 289040-63-7 289040-64-8 289040-66-0 289040-68-2 289040-70-6
 289040-72-8 289045-64-3 289045-67-6 289045-68-7 289045-69-8
 289045-70-1
 (**photoresist** compn. contg. alkali-sol. polymer with
 sulfonate group)

Hirotooshi; Takeyama, Naoki; Ichikawa, Koji (Wako Pure Chemical Industries, Ltd, Japan; Sumitomo Chemical Co., Ltd.). Eur. Pat. Appl. EP 1024406 A1 **20000802**, 99 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-300581 20000126. PRIORITY: JP 1999-20450 19990128.

AB The invention relates to a **resist** compn. used in prodn. of semiconductor elements, etc., and to a **resist** compn. used in formation of a pos. type pattern using deep UV light having 300 nm or lower wavelength, e. g., KrF excimer light as an exposure energy source. A **resist** compn. comprising (a) ≥ 2 kinds of polymers which become alkali-sol. by the action of an acid, (b) as a photoacid generator, a combination of an alkyl-sulfonyl diazomethane compd. and a triaryl-sulfonium aryl-sulfonate compd. or a diaryl-iodonium aryl-sulfonate compd., and (c) a solvent is excellent as a chem. amplified **resist** compn. to give excellent pattern shape and very fine line-and-space, particularly when exposed to lights having a wavelength of 300 nm or less.

IT **192314-56-0P 287381-51-5P 287381-61-7P**

(prepn. of polymer for **photoresist** compn. for KrF laser and UV light exposure)

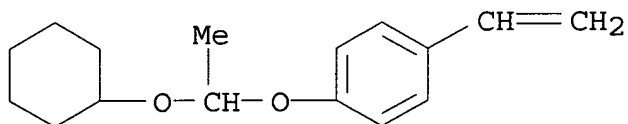
RN 192314-56-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

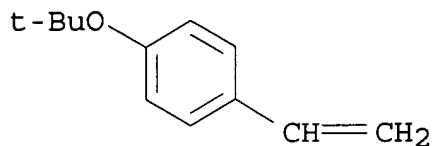
CMF C16 H22 O2



CM 2

CRN 95418-58-9

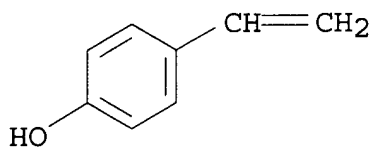
CMF C12 H16 O



CM 3

CRN 2628-17-3

CMF C8 H8 O



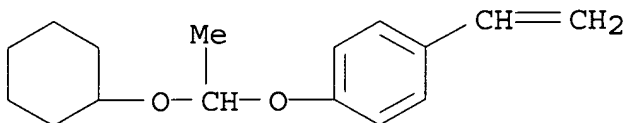
RN 287381-51-5 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with
 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol
 (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

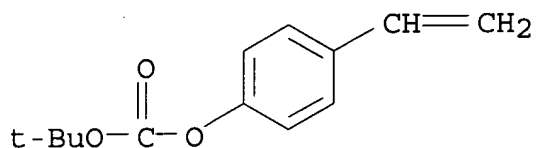
CMF C16 H22 O2



CM 2

CRN 87188-51-0

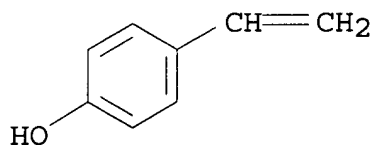
CMF C13 H16 O3



CM 3

CRN 2628-17-3

CMF C8 H8 O



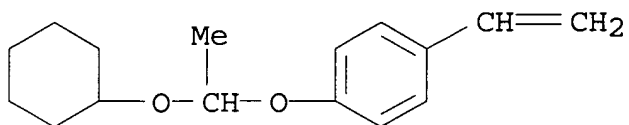
RN 287381-61-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol
 (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

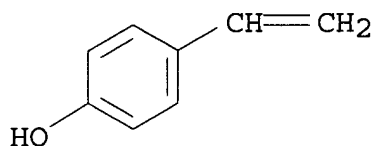
CMF C16 H22 O2



CM 2

CRN 2628-17-3

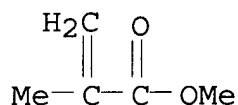
CMF C8 H8 O



CM 3

CRN 80-62-6

CMF C5 H8 O2



IC ICM G03F007-039

ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST polymer **photoresist** semiconductor laser UV exposureIT **Photoresists**

(**photoresist** compn. for KrF laser and UV light exposure contg.)

IT Polymers, preparation

(**photoresist** compn. for KrF laser and UV light exposure contg.)

IT 57-55-6P, 1,2-Propanediol, reactions 69-72-7P, reactions 96-48-0P, γ -Butyrolactone 102-71-6P, reactions 102-82-9P, Tributylamine 110-43-0P, 2-Heptanone 123-56-8P, Succinimide 126-00-1P, Diphenolic acid 127-19-5P, N,N-Dimethylacetamide 141-78-6P, Acetic acid ethyl ester, reactions 1116-76-3P, Trioctylamine 7509-44-6P, 9-Diazo-10-phenanthrene 9004-95-9P, Polyethylene glycol cetyl ether 13891-29-7P, Triphenylsulfonium tosylate 19293-63-1P, Dicyclohexylmethylamine 84540-57-8P, Propylene glycol monomethyl ether acetate 138529-81-4P, Bis(cyclohexylsulfonyl)diazomethane 138529-83-6P, Bis(isopropylsulfonyl)diazomethane 138529-84-7P 142342-33-4P 161453-44-7P 287381-63-9P 287381-64-0P

(**photoresist** compn. for KrF laser and UV light exposure contg.)

IT 123589-22-0P 125325-82-8P, p-(Tetrahydropyranyloxy)styrene-p-hydroxystyrene copolymer 129674-22-2P, p-Hydroxystyrene-p-tert-butoxycarbonyloxystyrene copolymer 158593-28-3P 171429-60-0P 171429-61-1P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene-p-methylstyrene copolymer 177034-67-2P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene-styrene copolymer 177034-68-3P 177034-74-1P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene-p-tetrahydropyranyloxystyrene copolymer 177034-75-2P 177034-76-3P 192314-50-4P **192314-56-0P** 194996-90-2P 199432-82-1P **287381-51-5P** 287381-52-6P 287381-53-7P 287381-54-8P 287381-55-9P 287381-56-0P 287381-57-1P 287381-58-2P 287381-59-3P 287381-60-6P **287381-61-7P**
(prepn. of polymer for **photoresist** compn. for KrF laser and UV light exposure)

L22 ANSWER 18 OF 27 HCA COPYRIGHT 2006 ACS on STN

133:18002 Ester monomers, polymers, **resist** compositions and patterning process. Kinsho, Takeshi; Nishi, Tsunehiro; Kurihara, Hideshi; Hasegawa, Koji; Watanabe, Takeru; Watanabe, Osamu; Nakashima, Mutsuo; Takeda, Takanobu; Hatakeyama, Jun (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 1004568 A2 **20000531**, 65 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-308687 19991102. PRIORITY: JP 1998-312533 19981102; JP 1999-75355 19990319.

AB An ester compd. having an exo-form 2-alkylbicyclo[2.2.1]heptan-2-yl group as the protective group is provided as well as a polymer comprising units of the ester compd. The polymer is used as a base resin to formulate a **resist** compn. having a higher sensitivity, resoln. and etching resistance than conventional **resist** compns. A polymer was prepd. from 8-ethyltricyclo[5.2.1.0^{2,6}]decan-8-yl methacrylate and 5-methyl-2-oxoxolan-5-yl methacrylate.

IT **271599-51-0P**
(ester monomers, polymers, **resist** compns. and patterning process)

RN 271599-51-0 HCA

CN 2-Propenoic acid, 2-methyl-, (3aR,4S,5R,7S,7aR)-5-ethyloctahydro-4,7-methano-1H-inden-5-yl ester, rel-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene, 1,1-dimethylethyl

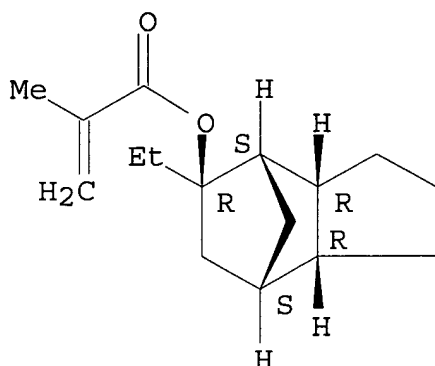
4-ethenylphenyl carbonate and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 271598-65-3

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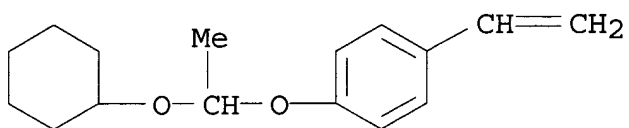
Relative stereochemistry.



CM 2

CRN 190434-67-4

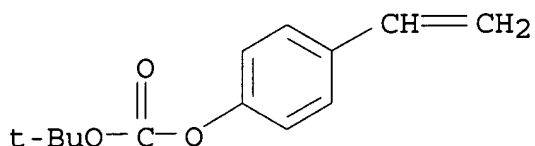
CMF C16 H22 O2



CM 3

CRN 87188-51-0

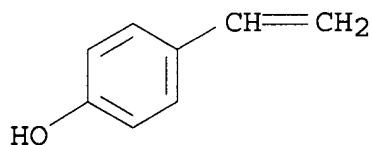
CMF C13 H16 O3



CM 4

CRN 2628-17-3

CMF C8 H8 O



IC ICM C07C069-54
ICS G03F007-039; C08F020-06

CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 74

ST bicycloheptanyl methacrylate polymer **resist**

IT Polymerization
(anionic; ester monomers, polymers, **resist** compns. and
patterning process)

IT Polymerization
(coordination; ester monomers, polymers, **resist** compns.
and patterning process)

IT **Resists**
(ester monomers, polymers, **resist** compns. and
patterning process)

IT Polymerization
(radical; ester monomers, polymers, **resist** compns. and
patterning process)

IT 119183-99-2P 271598-63-1P 271598-64-2P 271598-65-3P
271598-66-4P 271598-67-5P 271598-68-6P 271598-69-7P
271598-70-0P
(ester monomers, polymers, **resist** compns. and
patterning process)

IT 155040-27-0P 177034-75-2P 195154-78-0P 195154-83-7P

258871-96-4P	271598-71-1P	271598-72-2P	271598-73-3P
271598-74-4P	271598-75-5P	271598-76-6P	271598-78-8P
271598-81-3P	271598-84-6P	271598-86-8P	271598-89-1P
271598-91-5P	271598-94-8P	271598-97-1P	271599-00-9P
271599-03-2P	271599-06-5P	271599-09-8P	271599-11-2P
271599-14-5P	271599-16-7P	271599-18-9P	271599-21-4P
271599-24-7P	271599-26-9P	271599-28-1P	271599-30-5P
271599-32-7P	271599-33-8P	271599-34-9P	271599-35-0P
271599-36-1P	271599-37-2P	271599-38-3P	271599-39-4P
271599-40-7P	271599-41-8P	271599-42-9P	271599-43-0P
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271599-61-2P	271779-09-0P	271779-10-3P	271779-11-4P
271779-12-5P	271779-13-6P	271779-14-7P	271779-15-8P

(ester monomers, polymers, **resist** compns. and patterning process)

IT 74-96-4, Ethyl bromide 497-38-1, Bicyclo[2.2.1]heptan-2-one
920-46-7 13380-94-4, Tricyclo[5.2.1.0^{2,6}]decan-8-one
(ester monomers, polymers, **resist** compns. and patterning process)

L22 ANSWER 19 OF 27 HCA COPYRIGHT 2006 ACS on STN

130:274098 **Photoresist** composition. Watanabe, Satoshi;
Watanabe, Osamu; Furihata, Tomoyoshi; Takeda, Yoshifumi; Nagura,
Shigehiro; Ishihara, Toshinobu; Yamaoka, Tsuguo (Shin-Etsu Chemical
Co., Ltd., Japan). Eur. Pat. Appl. EP 908783 A1 **19990414**,
82 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR,
IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English).
CODEN: EPXXDW. APPLICATION: EP 1998-308175 19981008. PRIORITY: JP
1997-291681 19971008.

AB A **photoresist** compn. comprises (A) an org. solvent, (B) at
least two polymers with wt.-av. mol. wts. of 1000-500,000, which
have at least one type of acid labile groups and are crosslinked
within a mol. and/or between mols. with crosslinking groups having
C-O-C linkages, and (C) a photoacid generator. The
photoresist compn. has excellent sensitivity and resoln. and
provides **resist** patterns of outstanding thermal stability,
reproducibility, and plasma etching resistance. Patterns obtained
with the **photoresist** compn. are less prone to overhanging
and have excellent dimensional controllability. The

photoresist compn. is suitable as a micropatterning material for VLSI fabrication.

IT 221900-50-1

(**photoresist** compns. contg. photoacid generators and)

RN 221900-50-1 HCA

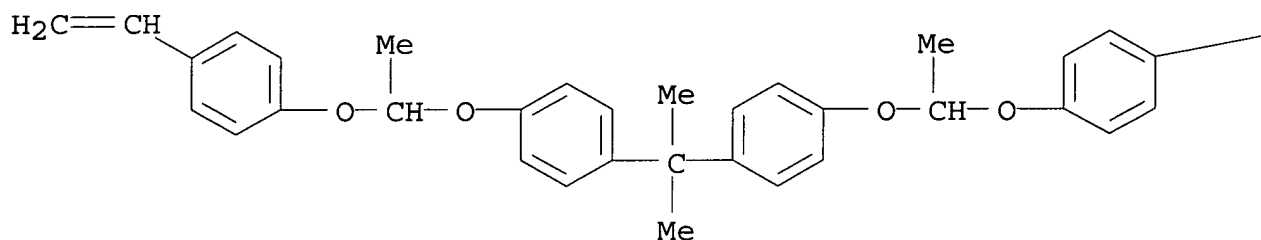
CN Phenol, 4-ethenyl-, polymer with 2-(4-ethenylphenoxy)tetrahydro-2H-pyran and 1,1'-(1-methylethylidene)bis[4-[1-(4-ethenylphenoxy)ethoxy]benzene] (9CI) (CA INDEX NAME)

CM 1

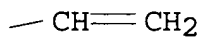
CRN 215319-90-7

CMF C35 H36 O4

PAGE 1-A



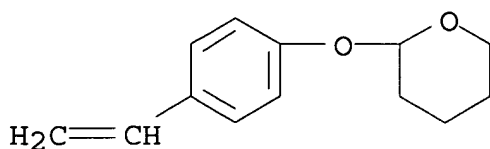
PAGE 1-B



CM 2

CRN 65409-15-6

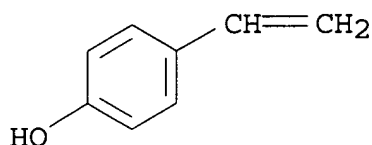
CMF C13 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS C08F008-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **photoresist** compn polymer acid labile groupIT **Photoresists**

(contg. crosslinked polymers having acid labile groups and photoacid generators)

IT 13094-35-4 14159-45-6 138529-81-4 141573-11-7 157089-24-2
 161453-44-7 180801-55-2 186769-06-2 186769-08-4 195723-93-4
 216870-63-2 221901-46-8

(photoresist compns. contg. crosslinked polymers having acid labile groups and)

IT 100-37-8, N,N-Diethylethanolamine 102-71-6, Triethanolamine, uses
 102-82-9, Tributylamine 110-18-9 126-00-1 127-19-5,
 N,N-Dimethylacetamide 139-87-7, N-Ethyldiethanolamine 142-08-5,
 2(1H)-Pyridinone 872-50-4, N-Methylpyrrolidone, uses 1734-16-3
 6674-22-2 18066-45-0 68510-93-0 72762-00-6, 2-Hydroxypyridine
 117458-06-7 158593-28-3 211919-60-7 220208-51-5,
 Piperidineethanol 221901-64-0

(photoresist compns. contg. crosslinked polymers having acid labile groups, photoacid generators and)

IT 129674-22-2 177034-75-2 218796-79-3 221900-20-5 221900-25-0
 221900-30-7 221900-34-1 221900-38-5 221900-44-3
221900-50-1 221900-55-6 221900-62-5 221900-71-6
 221900-76-1 221900-83-0

(photoresist compns. contg. photoacid generators and)

130:88163 Method of patterning chemical amplification-type positive working **resist** film. Hatakeyama, Jun; Nagura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10326017 A2 **19981208** Heisei, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-91041 19980319. PRIORITY: JP 1997-95103 19970328.

AB The process uses a **resist** which contains polymers having different acid unstable groups or a polymer having different acid-unstable groups in the same mol. By changing types and contents of the acid-unstable groups, an exposure (E1), which gives the av. dissoln. rate of the **resist** to be 100 Å/s to the depth up to 500 Å from the surface of the **resist** film, and an exposure (E2), which gives the av. dissoln. rate of the **resist** to be 100 Å/s to the height of 1,000 Å from the surface of the substrate, can suffice $-0.2 < (E2 - E1)/E2 < 0.2$. The process provided a **resist** pattern having high resoln. and focal depth.

IT **218796-81-7**
(polymer contained in chem. amplification-type pos. working **resist** film)

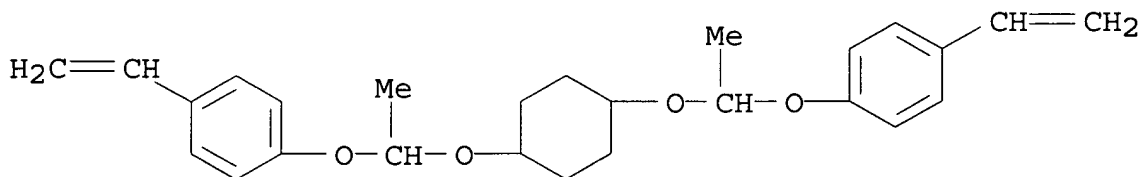
RN 218796-81-7 HCA

CN Phenol, 4-ethenyl-, polymer with 1,1'-[1,4-cyclohexanediylbis(oxyethylidene)oxy]bis[4-ethenylbenzene] and 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 218796-80-6

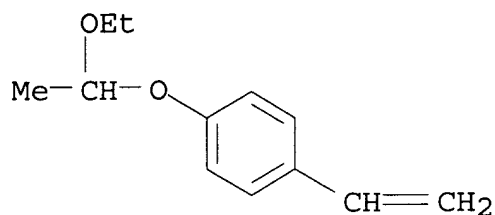
CMF C26 H32 O4



CM 2

CRN 157057-20-0

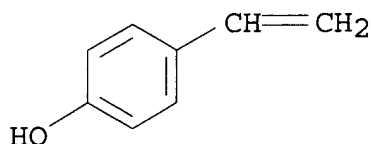
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; G03F007-38; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST **resist** patterning polymerIT **Photoresists**(method of patterning chem. amplification-type pos. working **resist** film)IT 24979-70-2 125325-82-8 157057-21-1 177034-75-2 218770-98-0
218796-79-3 **218796-81-7**(polymer contained in chem. amplification-type pos. working **resist** film)

L22 ANSWER 21 OF 27 HCA COPYRIGHT 2006 ACS on STN

129:337638 Polymer for positive-working chemically amplified

resist material. Honokai, Kiyoshi; Watanabe, Osamu;

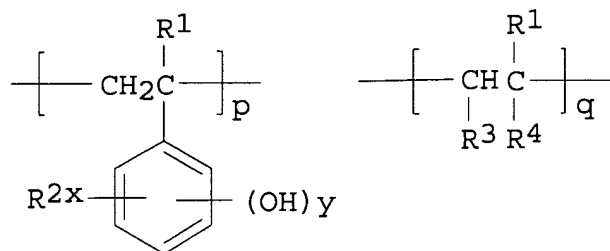
Watanabe, Satoshi; Nagura, Shigehiro; Ishihara, Toshinobu (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

10265524 A2 **19981006** Heisei, 78 pp. (Japanese). CODEN:

JKXXAF. APPLICATION: JP 1998-17972 19980114. PRIORITY: JP

1997-26026 19970124.

GI



I

AB The polymer material has a repeating unit I ($R_2 = H, CH_3$; $R_2 =$ alkyl; $R_3 = H$; $R_4 =$ ester; R_3 and R_4 forming $COOCO$; $x + y \leq 5$; $p + q = 1$, $0 < q/(p+q) \leq 0.9$). The compd. I has the phenolic hydrogens and/or hydrogens in carboxyl groups which are partially substituted with acid unstable group, and a $-C-O-C-$ polymer-linking group formed by the reaction between the remaining phenolic hydroxy and/or carboxy group with an alkenyl ether. The compd. I has 0-80 % of the total amt. of the acid unstable groups and polymer-linking groups based on the total of phenolic hydroxy and carboxylic groups, and 1,000-500,000 mol. wt. The **resist** material shows the excellent sensitivity, resoln., and plasma-etching resistance, and provides the excellent heat-resistant, little over-hung, and well size-controlled **resist** pattern.

IT 215319-91-8P 215320-00-6P

(polymer for pos.-working chem. amplified **resist** material)

RN 215319-91-8 HCA

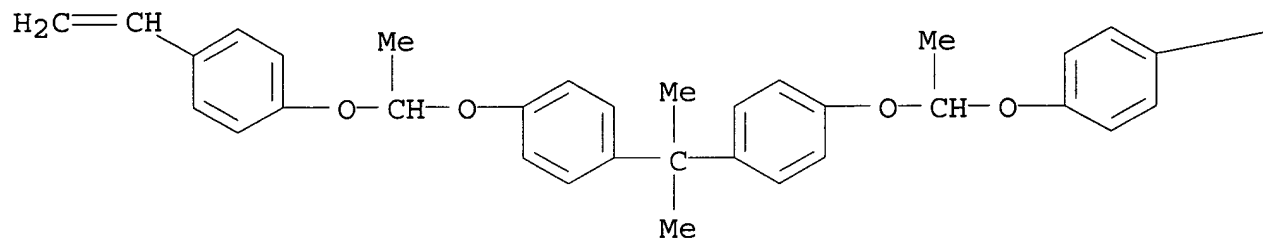
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 4-ethenylphenol, 2-(4-ethenylphenoxy)tetrahydro-2H-pyran and 1,1'-(1-methylethylidene)bis[4-[1-(4-ethenylphenoxy)ethoxy]benzene] (9CI) (CA INDEX NAME)

CM 1

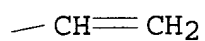
CRN 215319-90-7

CMF C35 H36 O4

PAGE 1-A



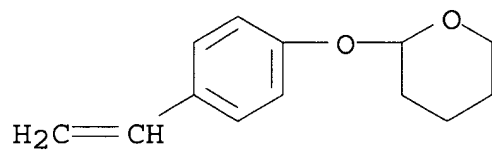
PAGE 1-B



CM 2

CRN 65409-15-6

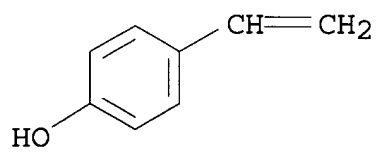
CMF C13 H16 O2



CM 3

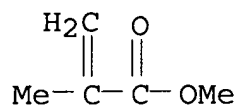
CRN 2628-17-3

CMF C8 H8 O



CM 4

CRN 80-62-6
CMF C5 H8 O2



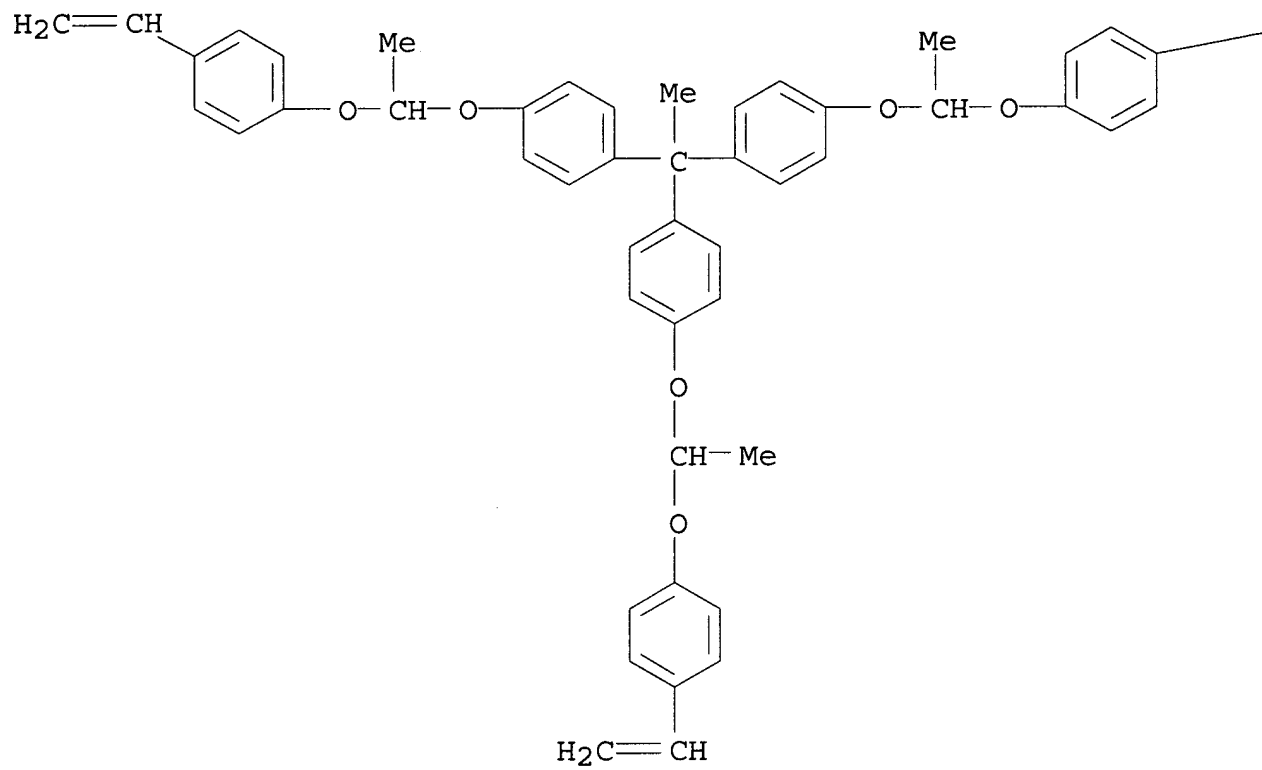
RN 215320-00-6 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
1,1-dimethylethyl 4-ethenylphenyl carbonate, 1-ethenyl-4-(1-
ethoxyethoxy)benzene, 4-ethenylphenol and 1,1',1''-ethylidynetris[4-
[1-(4-ethenylphenoxy)ethoxy]benzene] (9CI) (CA INDEX NAME)

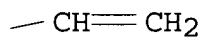
CM 1

CRN 215319-99-6
CMF C50 H48 O6

PAGE 1-A



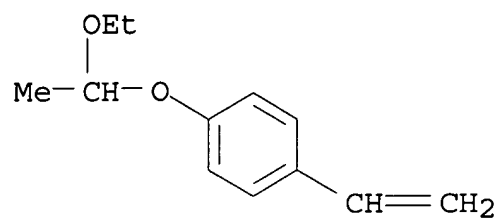
PAGE 1-B



CM 2

CRN 157057-20-0

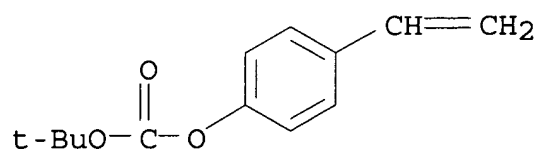
CMF C12 H16 O2



CM 3

CRN 87188-51-0

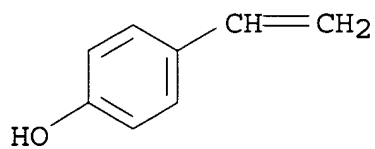
CMF C13 H16 O3



CM 4

CRN 2628-17-3

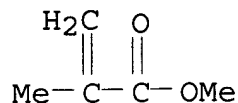
CMF C8 H8 O



CM 5

CRN 80-62-6

CMF C5 H8 O2



- IC ICM C08F012-24
ICS C08F008-00; C08F020-06; C08F020-12; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
- ST polymer pos working chem amplified **resist**
- IT Poly(arylenealkylenes)
(polymer for pos.-working chem. amplified **resist** material)
- IT **Resists**
(pos.-working; polymer for pos.-working chem. amplified **resist** material)
- IT 138217-23-9P
(polymer for pos.-working chem. amplified **resist** material)
- IT 24979-71-3P, 4-Hydroxy styrene-methyl methacrylate copolymer
24979-74-6P 110123-07-4P 215319-72-5P 215319-75-8P
215319-78-1P 215319-81-6P 215319-85-0P 215319-89-4P
215319-91-8P 215319-93-0P 215319-94-1P 215319-96-3P
215320-00-6P 215320-02-8P 215320-03-9P 215320-04-0P
215320-05-1P 215320-06-2P 215320-08-4P 215320-09-5P
215320-10-8P
(polymer for pos.-working chem. amplified **resist** material)
- L22 ANSWER 22 OF 27 HCA COPYRIGHT 2006 ACS on STN
- 129:181996 Photogenerators of sulfamic acids; use in chemically amplified single layer **resists**. Houlihan, F. M.; Kometani, J. M.; Timko, A. G.; Hutton, R. S.; Cirelli, R. A.; Reichmanis, E.; Nalamasu, O.; Gabor, A. H.; Medina, A. N.; Biafore, J. J.; Slater, S. G. (Bell Laboratories, Lucent Technologies, Murray Hill, NJ, USA). Journal of Photopolymer Science and Technology, 11(3), 419-430 (English) 1998. CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.
- AB A novel material, bis(4-tert-butylphenyl)iodonium cyclamate, an

alkylaminosulfonate salt capable of photogenerating a zwitterion sulfamic acid is shown to have utility in 248 and 193 nm single layer chem. amplified **resists**. Specifically, bis(4-tert-butylphenyl)iodonium cyclamate may be employed as a self-leveled photoacid generator (PAG) in **resists** in which protecting groups with a low activation energy are present. Alternatively, in resins protected with high activation groups, this material serves the role of a low volatility, low diffusion photodecomposable base used in conjunction with a super-acid PAG. In both types of **resists**, bis(4-tert-butylphenyl)iodonium cyclamate reduces **resist** line slimming and T-topping by resp. reducing acid diffusion and its depletion at the **resist** surface. The above mentioned advantages of reduced line slimming and post-exposure bake delay (PED) stability are accomplished both in the case of the low and high activation energy **resists** without the need for an addnl. amine component. Finally, formulation of the low activation energy **resist** with the cyclamate PAG suppresses film thickness loss during exposure thus reducing outgassing off volatiles.

IT 206861-61-2

(photogenerators of sulfamic acid for chem. amplified
resists)

RN 206861-61-2 HCA

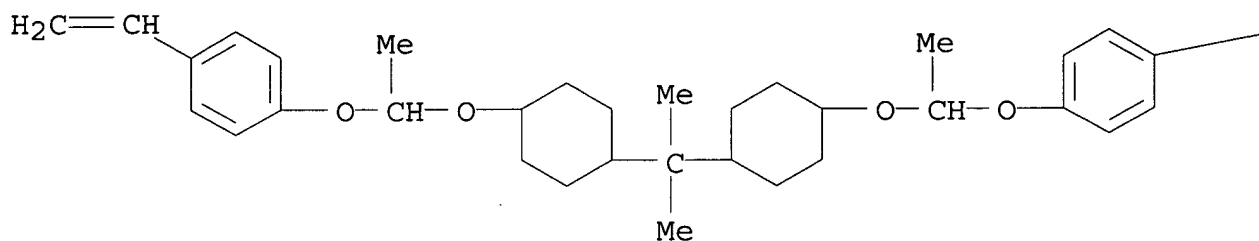
CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

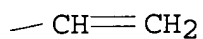
CRN 206861-56-5

CMF C35 H48 O4

PAGE 1-A



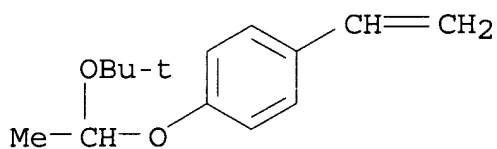
PAGE 1-B



CM 2

CRN 169811-45-4

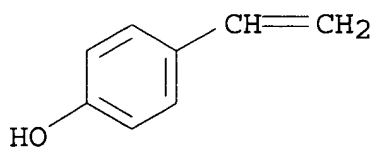
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

- ST **photoresist** acid photogenerator butylphenyliodonium cyclamate; sulfamic acid photogenerator chem amplified **resist**
- IT **Photoresists**
(chem. amplified; photogenerators of sulfamic acid for chem. amplified **resists** and lithog. properties of **resist** contg. bis(4-tert-butylphenyl)iodonium cyclamate generator)
- IT Photolysis
(photogenerators of sulfamic acid for chem. amplified **resists**)
- IT 211517-08-7, Bis(4-tert-butylphenyl)iodonium cyclamate
(bis(butylphenyl)iodonium cyclamate as photogenerator of sulfamic acid for chem. amplified **resists**)
- IT 100-88-9, Cyclamic acid
(in synthesis of sulfamic acid photogenerator for chem. amplified **resists**)
- IT 5329-14-6D, Sulfamic acid, derivs.
(photogenerators of sulfamic acid for chem. amplified **resists**)
- IT 98844-95-2P, Dicyclohexylammonium cyclamate
(photogenerators of sulfamic acid for chem. amplified **resists**)
- IT 157692-53-0 169965-90-6D, Cholan-24-oic acid, 3-hydroxy-, 1,1-dimethylethyl ester, (3 α ,5 β)-, derivs. 185195-30-6, Bis(4-tert-butylphenyl)iodonium camphorsulfonate 194999-85-4, Bis(4-tert-butylphenyl)iodonium nonaflate 195143-37-4 195247-76-8, Bis(4-tert-butylphenyl)iodonium 4-methoxybenzenesulfonate **206861-61-2**
(photogenerators of sulfamic acid for chem. amplified **resists**)
- IT 139-05-9, Sodium cyclamate
(reaction with bis(butylphenyl)iodonium chloride in synthesis of sulfamic acid photogenerator for chem. amplified **resists**)
- IT 5421-53-4, Bis(4-tert-butylphenyl)iodonium chloride
(reaction with sodium cyclamate in synthesis of sulfamic acid photogenerator for chem. amplified **resists**)

Kazuya; Sakaguchi, Shinji; Fujinomori, Akira (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10097075 A2 19980414 Heisei, 58 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1997-125686 19970515. PRIORITY: JP 1996-146180 19960607.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compns. comprise (A) CH₂:C(Rx)C₆H₄OH copolymer with CH₂:C(Rx)C₆H₄OC(Ra)(Rb)ORc and/or the copolymers contg. -C(Rd)(Re)ORfOC(Rg)(Rh)- crosslinking groups, (B) compds. generating acids upon irradiation of active light or radiation, and (C) I or II, wherein Rx = H, Me; Ra, Rb, Rd, Re, Rg, Rh = H, C1-8 alkyl, C3-6 cycloalkyl; Rc = C1-8 alkyl, C3-6 cycloalkyl, Q1; Rf = C1-6 alkylene, C3-6 cycloalkylene, Q2; Ri, Rj = H, C1-6 alkyl, C3-6 cycloalkylene; l + m = 100; m/(l + m) = 0.05-0.90; A = H, OH; E, G = Q3; R1-4 = H, XR13, halogen; R5, R6 = H, Me, Et, C1-2 haloalkyl; a-f, k-n = 0-3; g-j = 0-2; p = 1-3; D = direct bond, CO, S, SO₂, CR5R6, -C(R5)(R6)C₆H₄C(R5)(R6)-; R8-12 = H, OH, CN, CO₂H, XR13; R13 = C1-8 alkyl; X = direct bond, O, S, CO, O₂C.

IT 199432-81-0 206861-57-6 206861-58-7
206861-60-1 206861-61-2 206861-62-3
(pos.-type photoresist compns.)

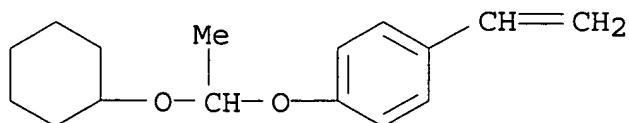
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

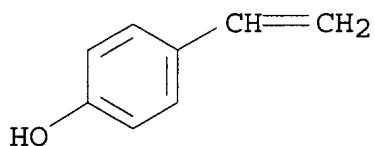
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



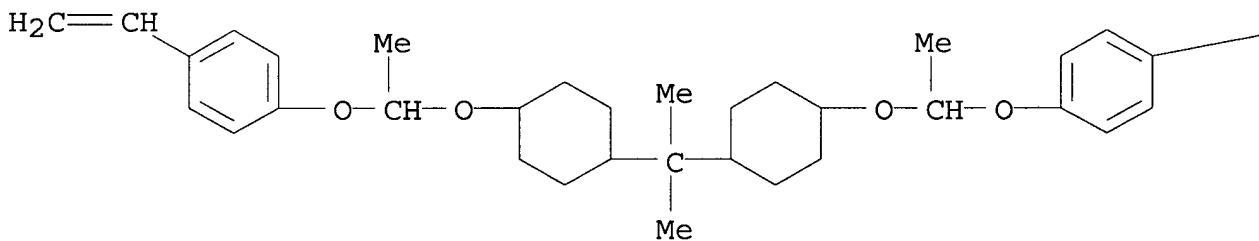
RN 206861-57-6 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediyl)oxyethylideneoxy]]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

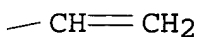
CRN 206861-56-5

CMF C35 H48 O4



PAGE 1-A

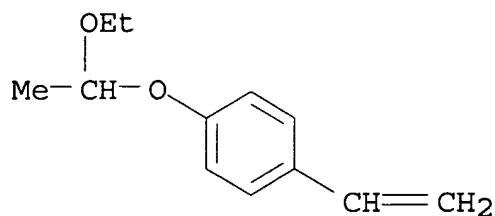
PAGE 1-B



CM 2

CRN 157057-20-0

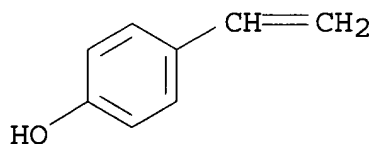
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



RN 206861-58-7 HCA

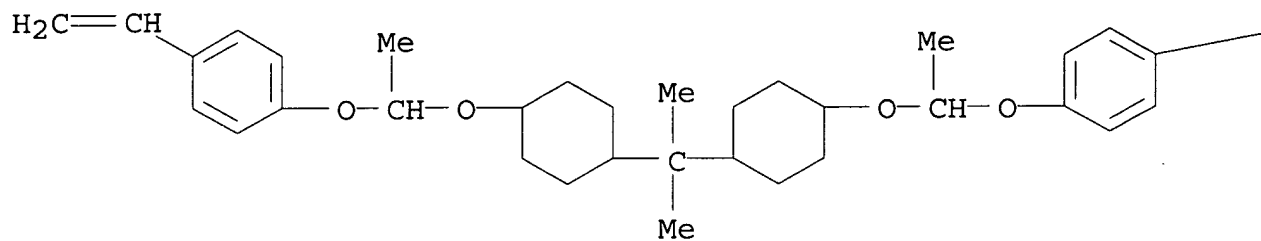
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-propoxyethoxy)benzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

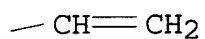
CRN 206861-56-5

CMF C35 H48 O4

PAGE 1-A



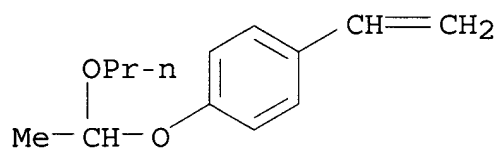
PAGE 1-B



CM 2

CRN 192314-66-2

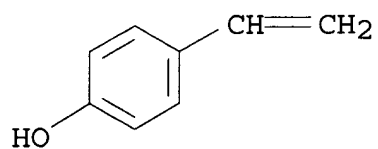
CMF C13 H18 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



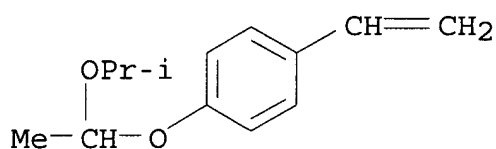
RN 206861-60-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(1-methylethoxy)ethoxy]benzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 206861-59-8

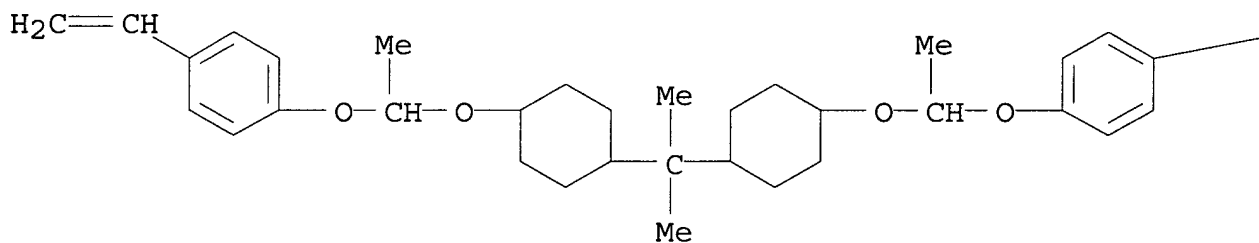
CMF C13 H18 O2



CM 2

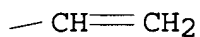
CRN 206861-56-5

CMF C35 H48 O4



PAGE 1-A

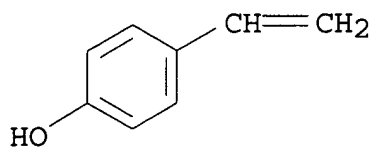
PAGE 1-B



CM 3

CRN 2628-17-3

CMF C8 H8 O



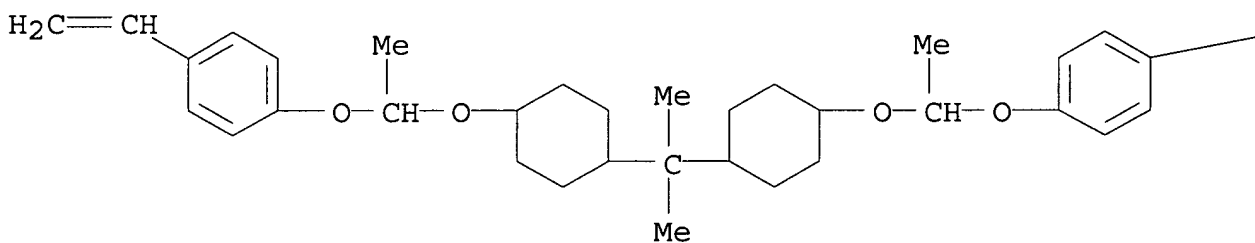
RN 206861-61-2 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

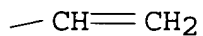
CRN 206861-56-5

CMF C35 H48 O4



PAGE 1-A

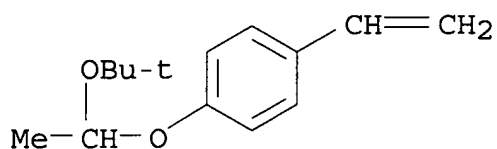
PAGE 1-B



CM 2

CRN 169811-45-4

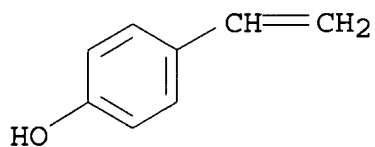
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



RN 206861-62-3 HCA

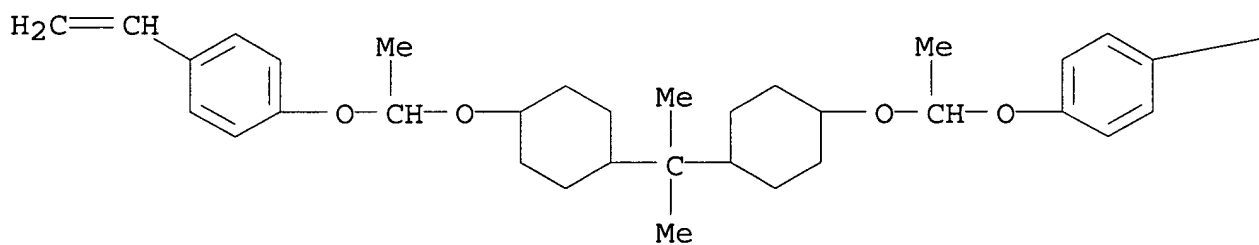
CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 1,1'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxyethylideneoxy)]bis[4-ethenylbenzene] (9CI) (CA INDEX NAME)

CM 1

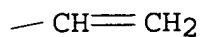
CRN 206861-56-5

CMF C35 H48 O4

PAGE 1-A



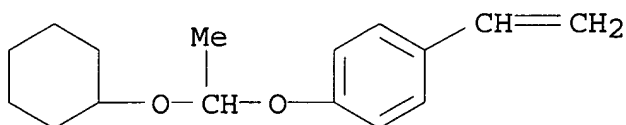
PAGE 1-B



CM 2

CRN 190434-67-4

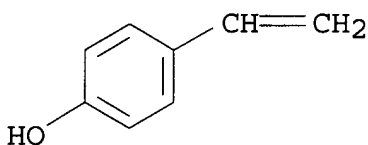
CMF C16 H22 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; H01L021-027; H05K003-06; C08F012-22; C08L025-18

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 76

ST **photoresist** pos type styrene deriv polymerIT **Photoresists**(pos.-type **photoresist** compns.)

IT	19361-97-8	31796-20-0	41580-58-9	56530-39-3	66003-78-9
	142096-70-6	153698-46-5	153698-67-0	177786-97-9	199432-75-2
	206861-49-6	206861-50-9	206861-52-1	206861-53-2	206861-54-3

(pos.-type **photoresist** compns.)

IT	153698-54-5P	153698-63-6P	153698-65-8P	189103-11-5P
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189103-13-7P 189103-14-8P 189103-15-9P 206861-55-4P
 (pos.-type **photoresist** compns.)

IT 107375-96-2P 110726-28-8P 110726-30-2P 110726-34-6P
 113629-59-7P 147079-30-9P 147079-31-0P 147079-32-1P
 147079-33-2P 147079-34-3P 147079-35-4P 147079-36-5P
 (pos.-type **photoresist** compns.)

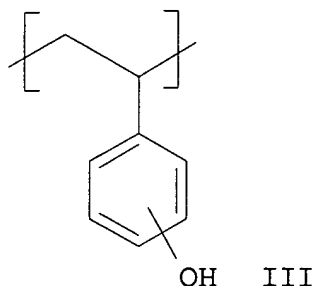
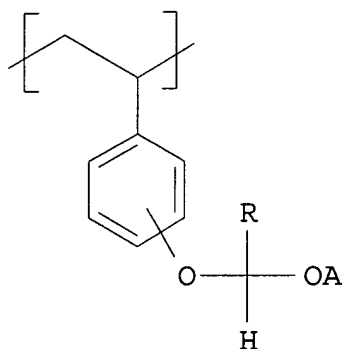
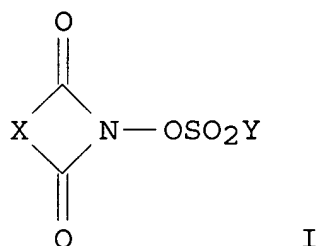
IT 24979-70-2, Poly(4-hydroxystyrene) 24979-74-6,
 p-Hydroxystyrene-styrene copolymer 87188-51-0 125325-82-8
 133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer
 142952-62-3, p-(tert-Butoxycarbonylmethoxy)styrene-p-hydroxystyrene
 copolymer 158593-28-3 171429-59-7, p-Acetoxystyrene-p-
 hydroxystyrene copolymer 196709-91-8 **199432-81-0**
206861-57-6 206861-58-7 206861-60-1
206861-61-2 206861-62-3
 (pos.-type **photoresist** compns.)

IT 50-00-0, Formaldehyde, reactions 80-05-7, Bisphenol A, reactions
 80-09-1, Bisphenol S 95-48-7, o-Cresol, reactions 108-39-4,
 reactions 108-95-2, Phenol, reactions 110-87-2,
 3,4-Dihydro-2H-pyran 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone
 576-26-1, 2,6-Dimethylphenol 611-99-4, 4,4'-Dihydroxybenzophenone
 623-05-2, 4-Hydroxymethylphenol 3957-22-0 4397-14-2,
 4-Hydroxymethyl-2,6-dimethylphenol 4466-18-6,
 α,α',α'' -Tris(4-hydroxyphenyl)-1,3,5-
 triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate
 5359-04-6, p-Isopropenylacetophenone 24424-99-5, Di-tert-butyl
 dicarbonate 76937-83-2, $\alpha,\alpha',\alpha'',\alpha',\alpha'$
 $''\alpha''$ -Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene
 87771-42-4, Ethanone, 1-[3-(1-methylethenyl)phenyl]- 148452-55-5
 153698-47-6, Cumyl bromoacetate
 (pos.-type **photoresist** compns.)

L22 ANSWER 24 OF 27 HCA COPYRIGHT 2006 ACS on STN

128:28627 Positive-working photosensitive composition. Kodama,
 Kunihiro; Aoi, Toshiaki; Uenishi, Kazuya (Fuji Photo Film Co.,
 Ltd., Japan). Eur. Pat. Appl. EP 803775 A1 **19971029**, 83
 pp. DESIGNATED STATES: R: BE, DE, GB. (English). CODEN: EPXXDW.
 APPLICATION: EP 1997-106841 19970424. PRIORITY: JP 1996-105635
 19960425; JP 1996-171327 19960701; JP 1997-101924 19970418.

GI



- AB Provided is a pos.-working photosensitive compn. useful for lithog. plate and semiconductor device manuf. comprising (a) a compd. represented by the formula I which generates a sulfonic acid by irradiation with active rays and (b) a resin comprising constitutional repeating units of the formulas II or III and having groups which enable an increase of the solubility in an alkali developer through their decomposition due to the action of an acid wherein Y represents an alkyl group, an aralkyl group, or a specific Ph, naphthyl, or anthracenyl group and Y may be bonded to the other imidesulfonate compound residue, X represents an alkylene group, an alkenylene group, an arylene group, or an aralkylene group and X may be bonded to the other imidesulfonate compound residue, R represents a hydrogen atom, an alkyl group, or an aralkyl group, and A represents an alkyl group or an aralkyl group and A may combine with R to complete a 5- or 6-membered ring.
- IT **199432-81-0P**, p-(1-Cyclohexyloxyethoxy)styrene-p-hydroxystyrene copolymer
(prepn. and use in pos. **photoresists** containing oxime sulfonate photoacid generators)

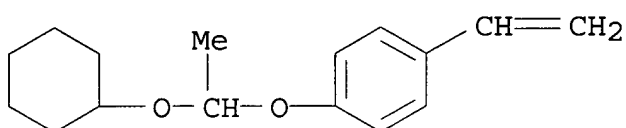
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

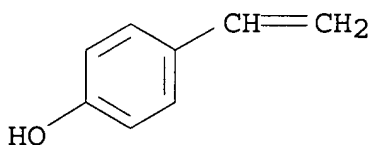
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-004

ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **photoresist** chem amplification oxime sulfonate

IT Positive **photoresists**

(chem. amplification; contg. oxime sulfonate photoacid generators and novolak resins)

IT 57212-70-1 67695-82-3 159300-88-6 199432-74-1 199432-75-2
199432-76-3 199432-77-4 199432-79-6 199432-80-9

(photoacid generator for pos. **photoresists**)

IT 125325-82-8, p-Hydroxystyrene-p-(2-tetrahydropyranyloxy) styrene copolymer

(pos. **photoresists** contg. oxime sulfonate photoacid generators and)

- IT 153698-63-6P 153698-69-2P 153840-05-2P 199432-83-2P
(prepn. and use as dissoln. inhibitor for pos.
photoresists contg. oxime sulfonate photoacid generators)
- IT 19361-97-8P 56530-39-3P 199432-78-5P
(prepn. and use as photoacid generator for pos.
photoresists)
- IT 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene
copolymer 158593-28-3DP, p-(1-Ethoxyethoxy)styrene-p-
hydroxystyrene copolymer, crosslinked 158593-28-3P,
p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer
196709-91-8DP, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene
copolymer, crosslinked 196709-91-8P, p-(1-tert-
Butoxyethoxy)styrene-p-hydroxystyrene copolymer **199432-81-0P**
, p-(1-Cyclohexyloxyethoxy)styrene-p-hydroxystyrene copolymer
199432-82-1DP, crosslinked 199432-82-1P, p-Hydroxystyrene-p-(1-
isobutoxyethoxy)styrene copolymer
(prepn. and use in pos. **photoresists** contg. oxime
sulfonate photoacid generators)

L22 ANSWER 25 OF 27 HCA COPYRIGHT 2006 ACS on STN
127:212525 Positive-working photosensitive composition. Aoi, Toshiaki;
Uenishi, Kazuya; Fujimori, Toru; Yamanaka, Tsukasa (Fuji Photo Film
Co., Ltd., Japan). Eur. Pat. Appl. EP 788031 A1 **19970806**,
85 pp. DESIGNATED STATES: R: BE, DE, FR, GB. (English). CODEN:
EPXXDW. APPLICATION: EP 1997-101827 19970205. PRIORITY: JP
1996-19001 19960205.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

- AB A pos.-working photosensitive compn. useful in prodn. of a lithog.
plate or semiconductor device comprises a resin having repeating
units represented by the formulas I, II, and III, resp., wherein R1
represents a hydrogen atom or a Me group; R2 represents
-C(O)OC(R6)(R7)(R8) or -OR5C(O)OC(R6)(R7)(R8); R3 represents
-OC(R6)(R7)(R8), -OSi(R6)(R7)(R8), or -OC(R9)(R10)OR11; R4
represents a hydrogen atom, a halogen atom, an alkyl group, an aryl
group, an alkoxy group, an acyl group, or an acyloxy group; R5
represents an alkylene group; R6, R7, R8, R10 each independently

represents a hydrogen atom, an alkyl group, a cycloalkyl group, or an alkenyl group, provided that at least two among R6, R7, and R8 are groups other than a hydrogen atom; R11 represents an alkyl group or an aryl group; two groups selected from R6, R7, and R8 and two groups selected from R9, R10, and R11, each two groups may be combined to form a ring; and n is an integer from 1 to 3, and a compd. which generates an acid with irradiation of an active ray or radiation.

IT 194712-76-0P

(prepn. and use in pos.-working photosensitive compns. for fabrication of lithog. plates and semiconductor devices)

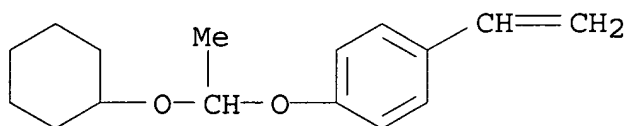
RN 194712-76-0 HCA

CN Acetic acid, (4-ethenylphenoxy)-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

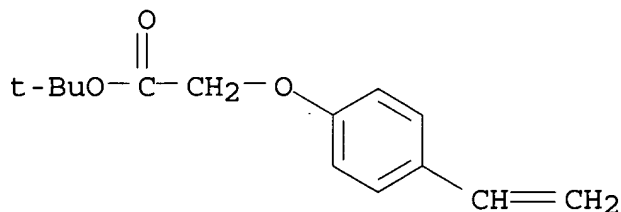
CMF C16 H22 O2



CM 2

CRN 142952-61-2

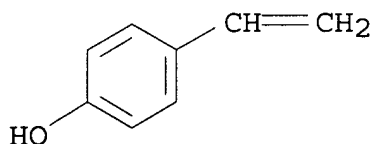
CMF C14 H18 O3



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **photoresist** styrene deriv terpolymerIT Positive **photoresists**

(contg. styrene deriv. terpolymers)

IT 194712-74-8P **194712-76-0P** 194712-78-2P 194712-79-3P

194712-80-6P 194712-82-8P 194712-84-0P 194712-87-3P

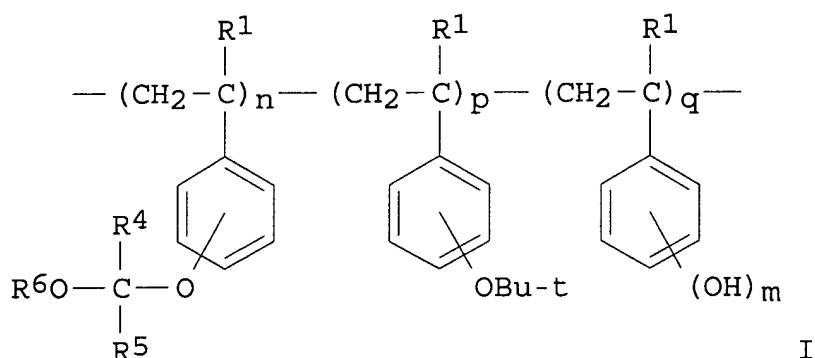
194712-88-4P 194712-89-5P 194712-90-8P

(prepn. and use in pos.-working photosensitive compns. for fabrication of lithog. plates and semiconductor devices)

L22 ANSWER 26 OF 27 HCA COPYRIGHT 2006 ACS on STN

127:115290 Chemically amplification-type positive-working **resist** composition. Watanabe, Osamu; Natakeyama, Jun; Nakura, Shigehiro; Ishihara, Toshinobu (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09160246 A2 **19970620** Heisei, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-337899 19951201.

GI



AB The title compn. comprises (A) an org. solvent, (B) a polymer with structural repeating units I [$\text{R}^1 = \text{H}, \text{Me}$; $\text{R}^4, \text{R}^5 = \text{H}, \text{C1-6 alkyl}$; $\text{R}^6 = \text{C1-10 alkyl}$; $m = 1-3$; $n, p, q = \text{d.p. satisfying following relations: } 0.02 \leq p/(p+q+r) \leq 0.5, 0.01 \leq q/(p+q+r) \leq 0.3, 0 < (p+q)/(p+q+r) \leq 0.8$] with a wt. av. mol. wt. of 3,000-300,000, (C) an acid generator, and (D) a soly.-controlling agent (11 Markush structures are given) with a wt. av. mol. wt. of 100-1,000 and contg. substituted phenolic groups. The compn. suitable for manufg. LSIs shows high sensitivity towards high energy rays.

IT 192314-56-0P

(chem. amplification-type pos.-working **resist** compn.)

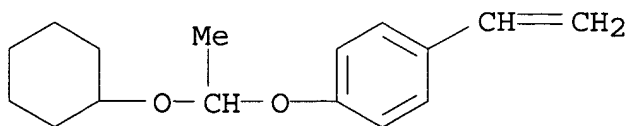
RN 192314-56-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI)
(CA INDEX NAME)

CM 1

CRN 190434-67-4

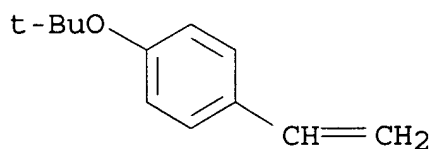
CMF C16 H22 O2



CM 2

CRN 95418-58-9

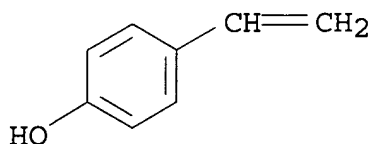
CMF C12 H16 O



CM 3

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

ST chem amplification pos working **resist** compn

IT Integrated circuits

Positive **photoresists**(chem. amplification-type pos.-working **resist** compn.)

IT 171429-60-0P, p-tert-Butoxystyrene-p-(1-ethoxyethoxy)styrene-p-vinylphenol copolymer 177034-68-3P 192314-47-9P,
 p-tert-Butoxystyrene-p-(1-methoxyethoxy)styrene-p-vinylphenol copolymer 192314-48-0P, p-tert-Butoxystyrene-p-(1-butoxyethoxy)styrene-p-vinylphenol copolymer 192314-50-4P
 192314-54-8P **192314-56-0P** 192314-58-2P 192314-61-7P
 192314-64-0P 192314-67-3P, p-tert-Butoxystyrene-p-(1-propoxyethoxy)styrene-p-vinylphenol copolymer

(chem. amplification-type pos.-working **resist** compn.)

IT 157089-24-2 161453-44-7 170632-63-0 180801-55-2 186769-06-2

186769-08-4 186769-10-8 186769-11-9

(photoacid generator; chem. amplification-type pos.-working
resist compn.)

IT 574-00-5D, 1,2-Naphthalenediol, reaction products with
tert-butoxycarbonic acid 1620-68-4D, reaction products with
tert-butoxycarbonic acid 7583-20-2D, reaction products with
tert-butoxycarbonic acid 9016-83-5D, Methylphenol-formaldehyde
copolymer, reaction products with tert-butoxycarbonic acid
18066-45-0D, reaction products with tert-butoxycarbonic acid
24979-70-2D, p-Hydroxystyrene homopolymer, reaction products with
tert-butoxycarbonic acid 51300-90-4D, Mono(tert-Butyl) carbonate,
reaction products with coumarin and indan derivs. 104105-16-0D,
1,1,3-Tris(hydroxyphenyl) butane, reaction products with
tetrahydropyran 117458-06-7 128595-64-2D, reaction products with
tert-butoxycarbonic acid 151319-83-4D, ethoxyethylated
162102-77-4 168766-36-7D, reaction products with
tert-butoxycarbonic acid 186848-70-4D, tert-Butoxycarbonylated
186848-71-5D, tert-Butoxycarbonylated
(soly.-controlling agent; chem. amplification-type pos.-working
resist compn.)

L22 ANSWER 27 OF 27 HCA COPYRIGHT 2006 ACS on STN

127:42277 Positive-working **photoresist** composition showing
high resolution power. Aoso, Toshiaki; Fujimori, Toru; Yamanaka,
Hitoshi; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 09106073 A2 **19970422** Heisei, 56 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-261635 19951009.

AB The compn. contains (i) a resin contg. a basic N and an
acid-decomposable group and (ii) an acid generator sensitive to
active/radiation beam. The resin may contain CH₂CR₁C₆H₄OH,
CH₂CR₁C₆H₄OR₂, and CH₂CR₁X or CH₂CR₁C₆H₄Y [R₁ = H, Me; R₂ = an
acid-decomposable group; X = a basic-N-contg. heterocycle, CONHR₃Z,
CO₂R₃Z (Z = a basic-N-contg. group; R₃ = alkylene, arylene); Y = a
basic-N-contg. group].

IT **190434-68-5P 190434-69-6P**

(alk.-developable pos.-working **photoresist** compn.
showing high resolu. power)

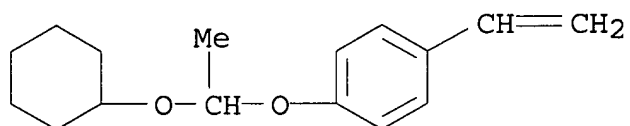
RN 190434-68-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-
ethenylbenzene and 4-ethenylpyridine (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

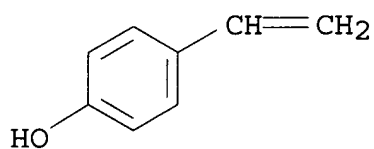
CMF C16 H22 O2



CM 2

CRN 2628-17-3

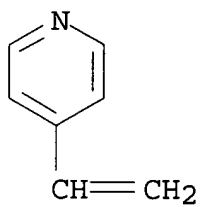
CMF C8 H8 O



CM 3

CRN 100-43-6

CMF C7 H7 N



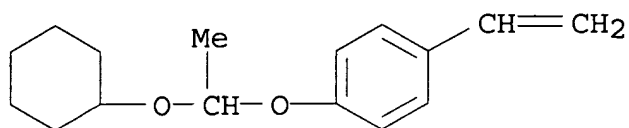
RN 190434-69-6 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 2-ethenylpyridine (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

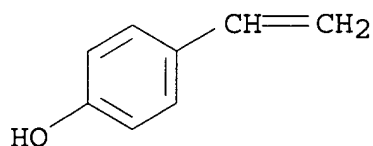
CMF C16 H22 O2



CM 2

CRN 2628-17-3

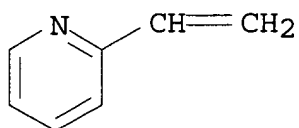
CMF C8 H8 O



CM 3

CRN 100-69-6

CMF C7 H7 N



IC ICM G03F007-039
 ICS G03F007-00; G03F007-004; G03F007-023; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38, 76
 ST pos **photoresist** chem amplified resolu power; basic
 nitrogen contg resin pos **photoresist**
 IT Positive **photoresists**
 (alk.-developable pos.-working **photoresist** compn.)

- showing high resoln. power)
- IT 926-02-3DP, tert-Butyl vinyl ether, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer 5292-43-3DP, tert-Butyl bromoacetate, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer **190434-68-5P 190434-69-6P**
190434-70-9P 190434-71-0P 190434-73-2P 190434-74-3P
190434-76-5P 190434-77-6DP, hydrolyzed, reaction product with tert-Bu bromoacetate 190434-80-1P 190612-94-3P 190612-95-4P
190677-60-2P
(alk.-developable pos.-working **photoresist** compn. showing high resoln. power)
- IT 190434-66-3
(alk.-developable pos.-working **photoresist** compn. showing high resoln. power)
- IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 142096-70-6
176109-33-4 177786-96-8
(photoacid generator; alk.-developable pos.-working **photoresist** compn. showing high resoln. power)

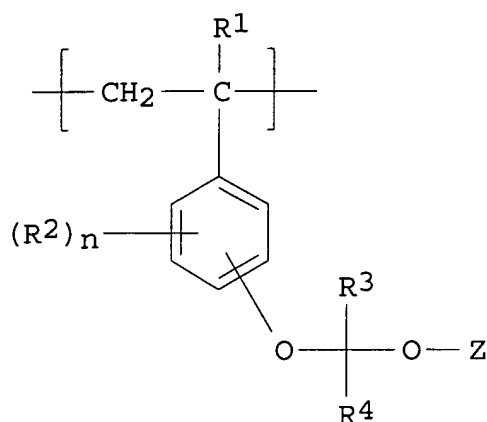
=> d 128 1-14 cbib abs hitstr hitind

L28 ANSWER 1 OF 14 HCA COPYRIGHT 2006 ACS on STN

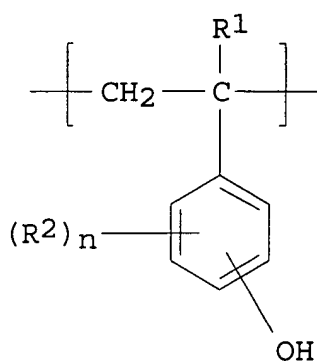
142:45908 Method of forming **positive-working**

resist pattern using phenolic resin composition. Yasunami, Shoichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004347985 A2 20041209, 50 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-146613 20030523.

GI



I



II

AB Disclosed is the process using a **resist** compn. made up of
 (a) an alkali-insol. or alkali-hardly sol. phenolic resin having phenolic OH protected by acetal or ketal group and becoming alkali sol. upon the interaction with an acid, (b) a compd. generating **sulfonic** acid upon receiving electron beam, x-ray, or EUV, and (c) a solvent, wherein the process comprises the steps of applying the compn. on a substrate to a film thickness ≤ 250 nm, effecting imagewise exposure, and developing. The phenolic resin may have repeating units represented by by I and II ($R_1 = H, Me, cyano, etc.$; $R_2 = alkyl, halo, etc.$; $R_{3,4} = H, C_{1-4} alkyl$; and $Z = C_{6-30}$ ring structure).

IT **288620-13-3P 503003-65-4P**

(formation of **pos.-working resist**
 pattern using phenolic resin compn.)

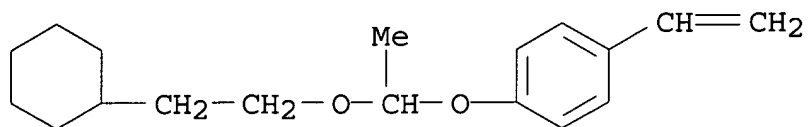
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

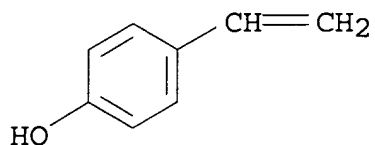
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



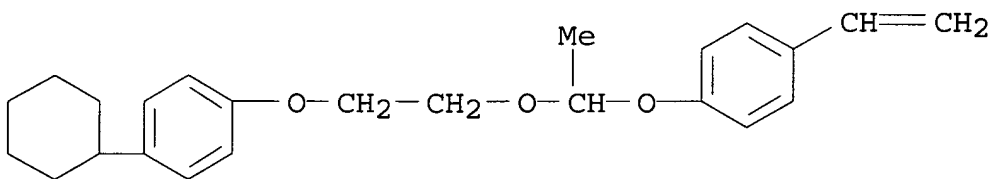
RN 503003-65-4 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]benzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 326591-95-1

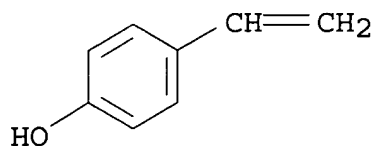
CMF C24 H30 O3



CM 2

CRN 2628-17-3

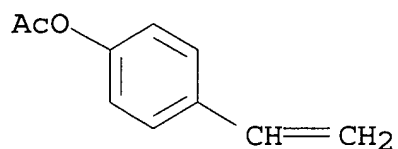
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IT 279244-35-8 279244-37-0 288620-15-5

326591-96-2 754191-45-2 754191-55-4

(formation of **pos.-working resist**
pattern using phenolic resin compn.)

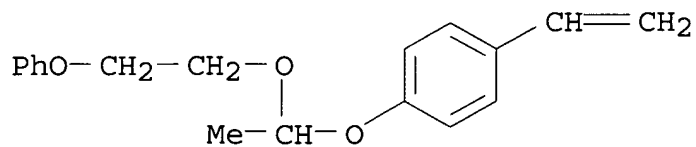
RN 279244-35-8 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenoxyethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 279244-34-7

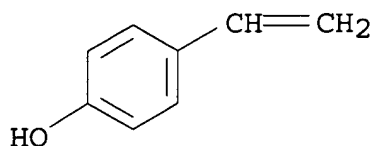
CMF C18 H20 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



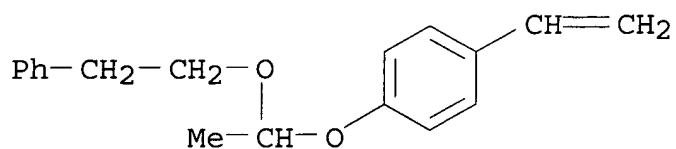
RN 279244-37-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

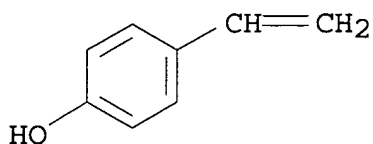
CMF C18 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



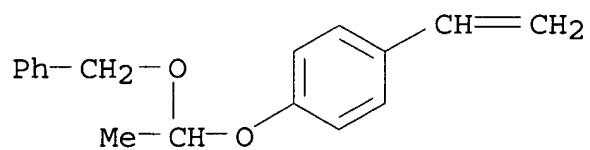
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

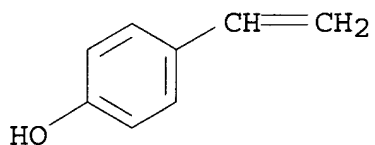
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



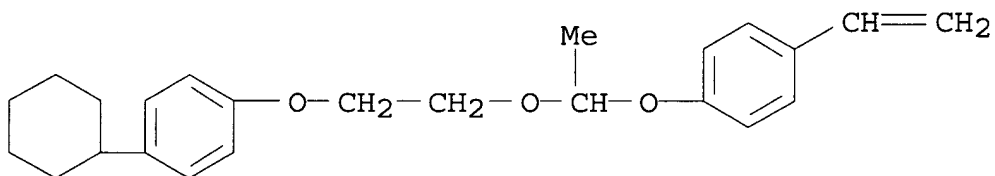
RN 326591-96-2 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 326591-95-1

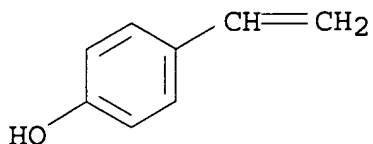
CMF C24 H30 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



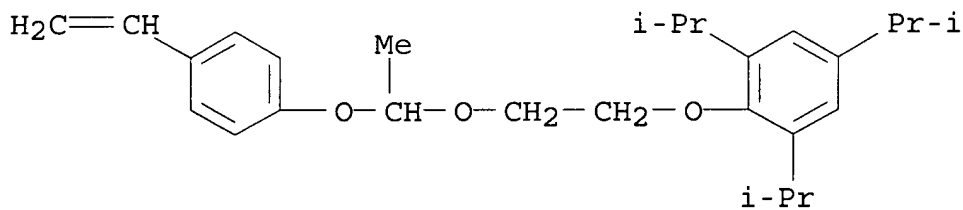
RN 754191-45-2 HCA

CN Phenol, 4-ethenyl-, polymer with 2-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]-1,3,5-tris(1-methylethyl)benzene (9CI)
(CA INDEX NAME)

CM 1

CRN 754191-44-1

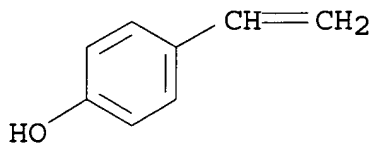
CMF C27 H38 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



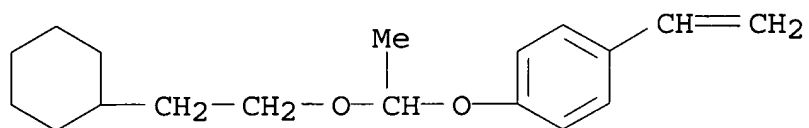
RN 754191-55-4 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

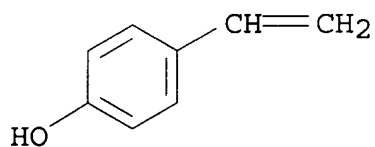
CMF C18 H26 O2



CM 2

CRN 2628-17-3

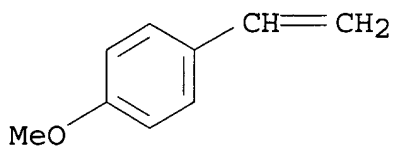
CMF C8 H8 O



CM 3

CRN 637-69-4

CMF C9 H10 O



IC ICM G03F007-039

ICS G03F007-26; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **pos working resist** pattern phenolic
 resin compn; electron beam x ray vacuum UV **resist**
photoresist; acid generating agent **photoacid**

IT **Photoresists**

- (UV; formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT Electron beam **resists**
X-ray **resists**
(formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT **Sulfonic** acids, uses
(formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT Phenolic resins, uses
(formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT 1886-74-4 144089-15-6 144317-44-2, Triphenylsulfonium
perfluorobutanesulfonate 153698-46-5 194999-85-4
197447-16-8 287925-55-7 335199-99-0 508210-39-7
(acid-generating agent; formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT 288620-13-3P 503003-65-4P
(formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT 279244-35-8 279244-37-0 288620-15-5
326591-96-2 754191-45-2 754191-55-4
(formation of **pos.-working resist** pattern using phenolic resin compn.)
- IT 109-92-2, Ethylvinyl ether 110-75-8, 2-Chloroethylvinyl ether
1131-60-8, p-Cyclohexylphenol 24979-70-2, Poly(p-hydroxystyrene)
(prepn. of phenolic resin for **pos.-working resist** compn.)
- IT 935-04-6P, Benzyl vinyl ether 212555-24-3P, 4-Cyclohexylphenoxyethylvinyl ether
(prepn. of phenolic resin for **pos.-working resist** compn.)

L28 ANSWER 2 OF 14 HCA COPYRIGHT 2006 ACS on STN

141:386375 **Positive-working photoresist**

composition for semiconductor device fabrication. Shirakawa, Hiroshi; Fujimori, Toru; Yasunami, Shoichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004302081 A2 20041028, 64 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-94332 20030331.

AB The title compn. contains a resin which increases the soly. in an

alkali developers by reacting with an acid, and a **photoacid** generator, wherein the resin has group $-O-(R_1)C(R_2)-O-[-(R_3)C(R_4)-]_m-$ Z ($R_1-2 = H$, C_1-4 alkyl; $R_3-4 = H$, alkyl; Z = Ph, alicyclic; m = integer 1-20) and wherein the **photoacid** generator consists of cation having a phenolic OH group and anion RSO_3- (R = F-contg. $C_{\geq 2}$ alkyl, alkyl and/or halo substituted Ph, Ph having ≥ 2 halo-contg. alkyl substituents, etc.). The compn. shows high sensitivity and good PED characteristics and **resist** pattern of high resoln. and good profile.

IT 279244-35-8P 279244-37-0P 288620-13-3P
326591-96-2P 359434-80-3P

(resin in **pos.-working photoresist** compn.)

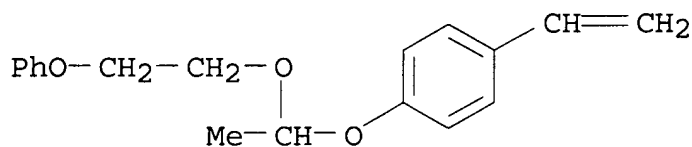
RN 279244-35-8 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenoxyethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 279244-34-7

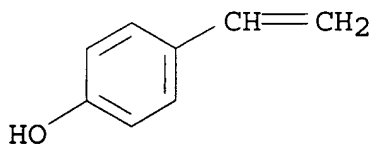
CMF C18 H20 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



RN 279244-37-0 HCA

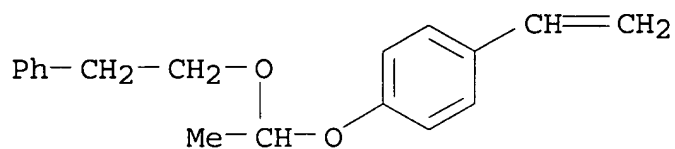
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-

phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

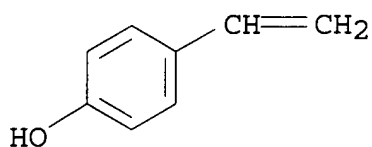
CMF C18 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



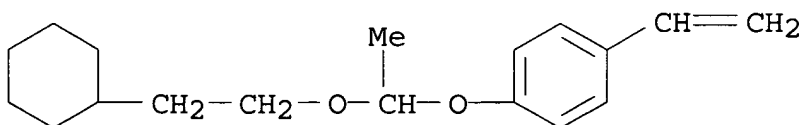
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

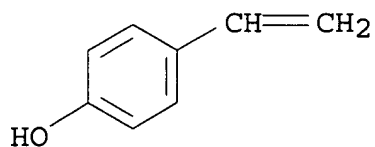
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



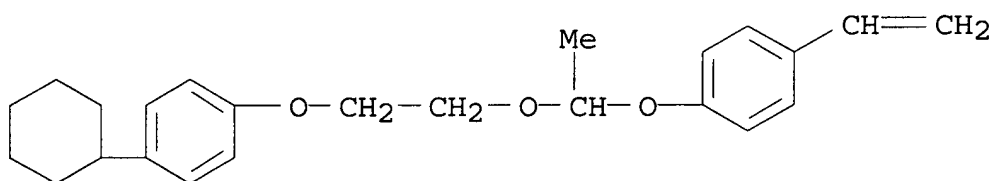
RN 326591-96-2 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 326591-95-1

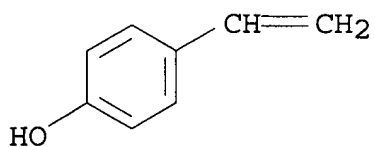
CMF C24 H30 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



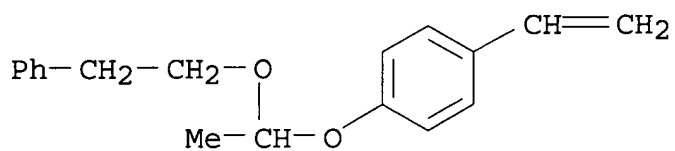
RN 359434-80-3 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

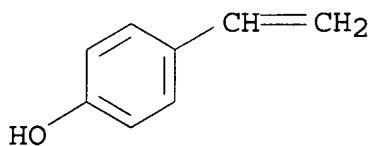
CMF C18 H20 O2



CM 2

CRN 2628-17-3

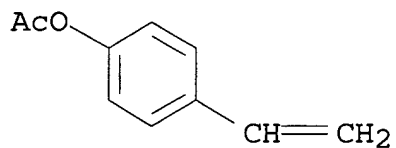
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST pos photoresist compn resin photoacid generator

IT Positive photoresists

Semiconductor device fabrication

(**pos.-working photoresist** compn.)

IT 110-75-8, 2-Chloroethyl vinyl ether 375-73-5D,
Nonafluorobutanesulfonic acid, tetramethylammonium salt
1131-60-8, p-Cyclohexylphenol 12027-06-4, Ammonium iodide
14763-63-4, 4-Hydroxydiphenyl sulfoxide

(**pos.-working photoresist** compn.)

IT 75-59-2DP, Tetramethylammonium hydroxide, salt with
sulfonate 2991-84-6DP, 1-Butanesulfonyl
chloride, nonafluoro-, salt with ammonium

(**pos.-working photoresist** compn.)

IT 24979-70-2DP, VP 8000, reaction product with 4-
cyclohexylphenoxyethyl vinyl ether vinyl ether 31814-77-4DP,
Phenethyl vinyl ether, reaction product with styrene polymer
58991-77-8DP, P 1500, reaction product with benzylethyl vinyl ether
212555-24-3DP, 4-Cyclohexylphenoxyethyl vinyl ether, reaction
product with p-hydroxystyrene polymer

(**pos.-working photoresist** compn.)

IT 279244-35-8P 279244-37-0P 288620-13-3P
326591-96-2P 328935-88-2P 359434-80-3P
391232-41-0P 524699-48-7P 528593-36-4P 782490-84-0P
782490-85-1P 782490-86-2P 782490-88-4P 782490-89-5P
782490-91-9P

(resin in **pos.-working photoresist**
compn.)

L28 ANSWER 3 OF 14 HCA COPYRIGHT 2006 ACS on STN

140:261414 Positive-type **resist** compositions with reduced
out-gas emission for vacuum UV microlithography. Kanna, Shinichi;
Mizutani, Kazuyoshi; Sasaki, Tomoya (Fuji Photo Film Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 2004086020 A2 20040318, 76 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-249040 20020828.

AB The compns., suitable for F2 excimer laser (157 nm) photolithog.,
contain polymers (A), having repeating units CH₂CR₂Q [Q =
C(OR₁)R₃R₄-substituted Ph or cyclohexyl; R₁ = H, C₆-30 org. group;
R₂ = H, halo, alkyl; R₃ = CR₄R₅R₆; R₄ = CR₇R₈R₉; R₄-7 = H, F,
fluoroalkyl; ≥ 1 of R₄-9 contain F] and increasing alkali
soly. by acid-induced decompn., **photoacid** generators (B),
and solvents (C).

IT 671817-84-8P 671817-86-0P 671817-95-1P
(acid-decomposable polymer; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV

photolithog.)

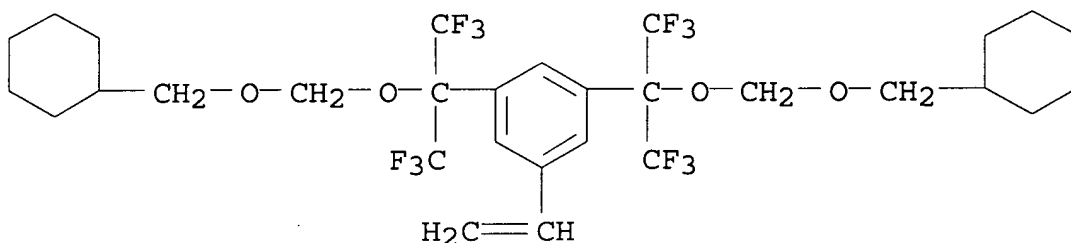
RN 671817-84-8 HCA

CN 1,3-Benzenedimethanol, 5-ethenyl- $\alpha,\alpha,\alpha',\alpha'$ -
tetrakis(trifluoromethyl)-, polymer with 1,3-bis[1-
[(cyclohexylmethoxy)methoxy]-2,2,2-trifluoro-1-
(trifluoromethyl)ethyl]-5-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 671817-83-7

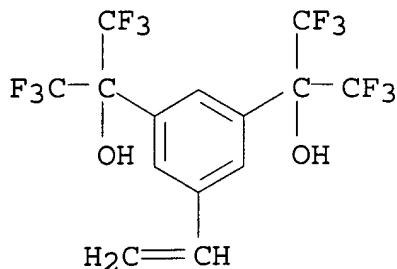
CMF C30 H36 F12 O4



CM 2

CRN 568587-26-8

CMF C14 H8 F12 O2



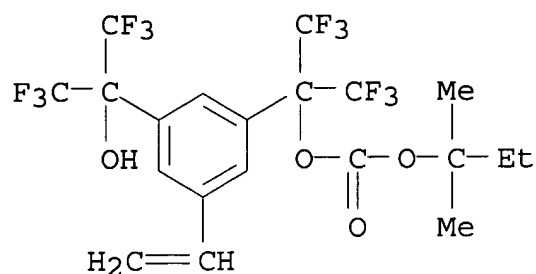
RN 671817-86-0 HCA

CN Carbonic acid, 1,1-dimethylpropyl 1-[3-ethenyl-5-[2,2,2-trifluoro-1-
hydroxy-1-(trifluoromethyl)ethyl]phenyl]-2,2,2-trifluoro-1-
(trifluoromethyl)ethyl ester, polymer with 1-[1-
(cyclohexylmethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 671817-85-9

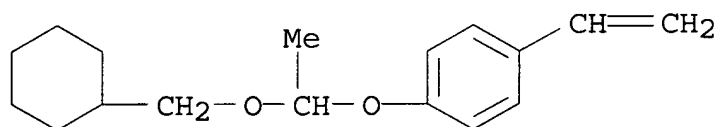
CMF C20 H18 F12 O4



CM 2

CRN 430437-16-4

CMF C17 H24 O2



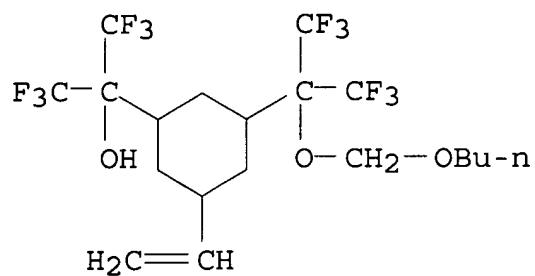
RN 671817-95-1 HCA

CN Benzenemethanol, 3-[1-(butoxymethoxy)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-5-ethenyl- α,α' -bis(trifluoromethyl)-, polymer with 3-[1-(butoxymethoxy)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-5-ethenyl- α,α' -bis(trifluoromethyl)cyclohexanemethanol and 1-[1-(cyclohexylmethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 671817-94-0

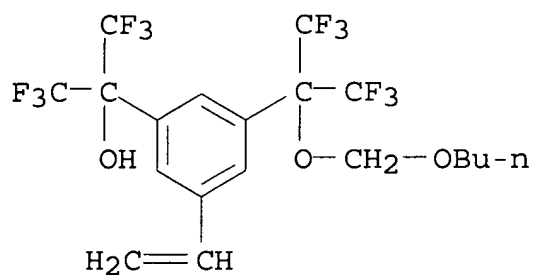
CMF C19 H24 F12 O3



CM 2

CRN 671817-93-9

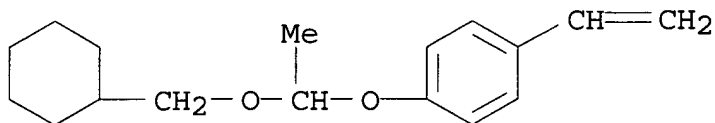
CMF C19 H18 F12 O3



CM 3

CRN 430437-16-4

CMF C17 H24 O2



IC ICM G03F007-039

ICS C08F012-22; C08F016-00; H01L021-027

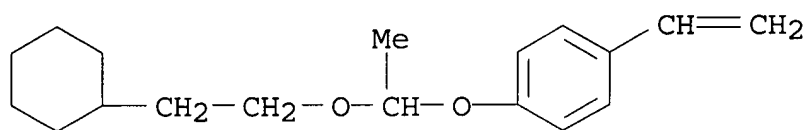
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

- ST **pos resist** out gas redn photolithog; vacuum UV
photoresist fluoroalkylphenyl vinyl polymer; excimer laser
photolithog **photoresist photoacid** generator
- IT Surfactants
(F- or Si-type; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT **Positive photoresists**
(UV; **pos.-working photoresists** with
reduced out-gas emission for vacuum UV photolithog.)
- IT Fluoropolymers, preparation
(acid-decomposable polymer; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 1625-60-1DP, reaction products with OH- and F-contg. phenylvinyl
polymer 585569-81-9DP, reaction products with chloromethyl
cyclohexylmethyl ether **671817-84-8P 671817-86-0P**
671817-89-3P 671817-91-7P 671817-92-8P 671817-95-1P
671817-97-3P 671817-98-4P
(acid-decomposable polymer; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 1116-76-3, Trioctylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-
nonene
(basic compd.; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 501935-24-6P 585573-34-8P 585573-35-9P
(for monomer prep.; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 107-30-2, Chloromethyl methyl ether 802-93-7, 1,3-Bis(2-
hydroxyhexafluoroisopropyl)benzene 1826-67-1, Vinyl magnesium
bromide
(for monomer prep.; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 64-19-7, Acetic acid, reactions 375-73-5,
Nonafluorobutanesulfonic acid 3744-08-9,
Triphenylsulfonium iodide
(for **photoacid** generator prep.; **pos.-**
working photoresists with reduced out-gas

- emission for vacuum UV photolithog.)
- IT 568587-26-8P 585573-59-7P
(monomer; **pos.-working photoresists**
with reduced out-gas emission for vacuum UV photolithog.)
- IT 19600-49-8P, Triphenylsulfonium acetate 144317-44-2P,
Triphenylsulfonium **nonafluorobutanesulfonate**
(**photoacid** generator; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- IT 137462-24-9, Megafac F 176
(surfactant; **pos.-working**
photoresists with reduced out-gas emission for vacuum UV
photolithog.)
- L28 ANSWER 4 OF 14 HCA COPYRIGHT 2006 ACS on STN
139:356046 Chemically amplified **positive-working**
photoresist composition. Hyakuta, Atsushi; Kawabe, Yasumasa
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
2003307840 A2 **20031031**, 27 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 2003-35222 20030213. PRIORITY: JP
2002-35817 20020213.
- AB The claimed compn. comprises (a) a resin increasing its alkali soly.
by acid decompn. and (b) compds. capable of generating an acid upon
irradn. with an actinic ray or a radiation (1) an
oximesulfonate compd. R1R2C:NOO2SR3 (R1 and R2 = alkyl,
alkenyl, alkynyl, aryl, heterocyclic, or cyano; R1 and R2 may
combine to form a ring; R3 = alkyl or aryl) and (2) an onium salt
R11N+R12R13R14X-, R15S+R16R17X-, and/or R18I+R19X- (R11-R19 = alkyl,
cycloalkyl, acyl, or aryl; X- = OH- or anion of carboxylic acid
having mol. wt. ≤ 100). The compn. provides suppressed line
edge roughness and high PED (post-exposure delay) stability.
- IT **288620-13-3P 325143-37-1P 618115-25-6P**
(chem. amplified **pos.-working**
photoresist compn. contg. **oximesulfonate** compd.
and onium salt)
- RN 288620-13-3 HCA
- CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-
ethenylbenzene (9CI) (CA INDEX NAME)
- CM 1
- CRN 288620-12-2

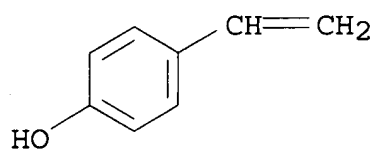
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



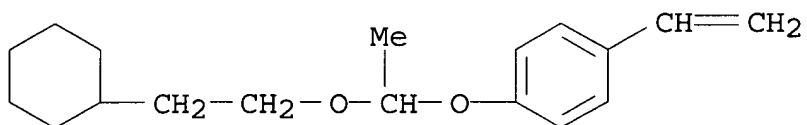
RN 325143-37-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

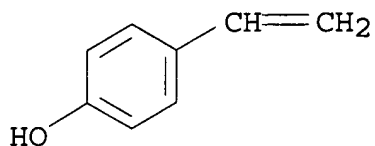
CMF C18 H26 O2



CM 2

CRN 2628-17-3

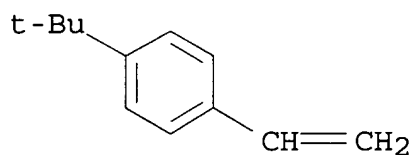
CMF C8 H8 O



CM 3

CRN 1746-23-2

CMF C12 H16



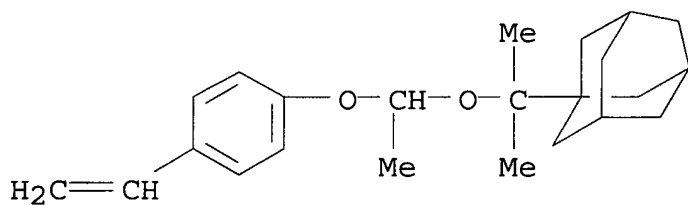
RN 618115-25-6 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 1-[1-[1-(4-ethenylphenoxy)ethoxy]-1-methylethyl]tricyclo[3.3.1.1^{3,7}]decane (9CI) (CA INDEX NAME)

CM 1

CRN 618115-24-5

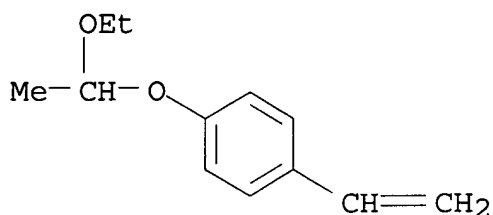
CMF C23 H32 O2



CM 2

CRN 157057-20-0

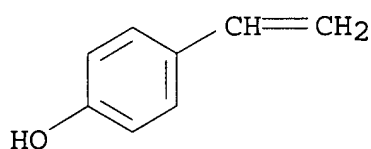
CMF C12 H16 O2



CM 3

CRN 2628-17-3

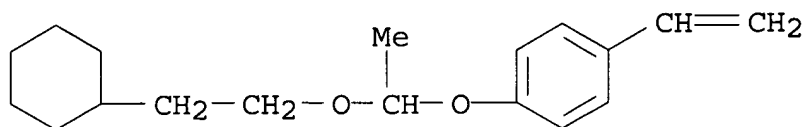
CMF C8 H8 O



- IC ICM G03F007-004
ICS G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos **photoresist** alkali sol resin **oximesulfonate** compd onium salt
- IT Positive **photoresists**
(chem. amplified **pos.-working photoresist** compn. contg. **oximesulfonate** compd. and onium salt)
- IT Onium compounds
(iodonium, salts, **photoacid** generators; chem. amplified **pos.-working photoresist** compn. contg. **oximesulfonate** compd. and onium salt)
- IT Quaternary ammonium compounds, preparation
(**photoacid** generators; chem. amplified **pos.-working photoresist** compn. contg. **oximesulfonate** compd. and onium salt)
- IT Oximes
Sulfonic acids, uses
(**photoacid** generators; chem. amplified **pos.-working photoresist** compn. contg.)

- oximesulfonate** compd. and onium salt)
- IT Sulfonium compounds
(salts, **photoacid** generators; chem. amplified
pos.-working photoresist compn.
contg. **oximesulfonate** compd. and onium salt)
- IT 158593-28-3P, p-1-Ethoxyethoxystyrene-p-hydroxystyrene copolymer
159296-87-4P, tert-Butyl acrylate-p-hydroxystyrene copolymer
287381-52-6P, p-1-Ethoxyethoxystyrene-p-hydroxystyrene-p-
isopropoxystyrene copolymer **288620-13-3P**
325143-37-1P 618115-23-4P **618115-25-6P**
(chem. amplified **pos.-working**
photoresist compn. contg. **oximesulfonate** compd.
and onium salt)
- IT 19600-49-8P 372968-20-2P, preparation
(**photoacid** generator; chem. amplified **pos.-**
working photoresist compn. contg.
oximesulfonate compd. and onium salt)
- IT 204993-53-3 618115-26-7
(**photoacid** generator; chem. amplified **pos.-**
working photoresist compn. contg.
oximesulfonate compd. and onium salt)
- IT 103983-46-6P 500541-92-4P
(prepn. and reaction of, in prepn. of alkali-sol. resin; chem.
amplified **pos.-working photoresist**
compn. contg. **oximesulfonate** compd. and onium salt)
- IT 109-92-2, Ethyl vinyl ether 775-64-4 926-02-3, tert-Butylvinyl
ether 4442-79-9, Cyclohexyl ethyl alcohol
(reaction of, in prepn. of alkali-sol. resin; chem. amplified
pos.-working photoresist compn.
contg. **oximesulfonate** compd. and onium salt)
- IT 107-92-6, Butyric acid, reactions
(reaction of, phenyliodonium iodide; chem. amplified **pos**
.-working photoresist compn. contg.
oximesulfonate compd. and onium salt)
- IT 3744-08-9, Triphenylsulfonium iodide
(reaction of, with acetic acid; chem. amplified **pos.-**
working photoresist compn. contg.
oximesulfonate compd. and onium salt)
- IT 2217-79-0, (Diphenyliodonium) iodide
(reaction of, with butyric acid; chem. amplified **pos.-**
working photoresist compn. contg.
oximesulfonate compd. and onium salt)

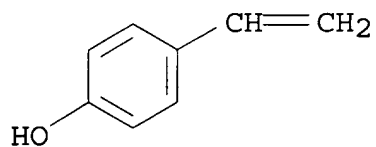
- IT 64-19-7, Acetic acid, reactions
(reaction of, with phenylsulfonium iodide; chem. amplified
pos.-working photoresist compn.
contg. **oximesulfonate** compd. and onium salt)
- L28 ANSWER 5 OF 14 HCA COPYRIGHT 2006 ACS on STN
139:343479 Sulfonium compounds as radiation-sensitive acid generators
and **resist** compositions containing them. Kodama, Kunihiro
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
2003307839 A2 **20031031**, 66 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 2002-112372 20020415.
- AB (Ba)mAaS+Y1Y2 X- (I; Y1, Y2 = alkyl, aryl, aralkyl, heterocyclyl,
oxoalkyl, oxoaralkyl; Y1 and Y2 may be bonded together to form a
ring; Aa = direct bond, org. group; Ba = group having CONRa or
SO2NRA; Ra = H, alkyl; m = 1-3; X- = nonnucleophilic anion), which
generate acids upon irradiation with actinic ray or radiation, are
claimed. Also claimed are **resist** compns. contg. I,
pos.-working resist compns. contg. I and
resins which are decomposed by acids to show increased solubility to an
alk. developer, neg.-working **resist** compns. contg. I,
water-insol. alkali-sol. resins, and crosslinking agents which
crosslink to the alkali-sol. resins by acids, etc. The
resist compns. contg. I show high sensitivity, resolution, and
good profile, and are especially suitable for irradiation with far-UV and
electron beam.
- IT **288620-13-3P 288620-15-5P 289706-85-0P**
326591-96-2P 372968-15-5P 503003-65-4P
(preparation of sulfonium compounds having amide or sulfonamide linkage
as radiation-sensitive acid generators and **resist**
compns. containing them)
- RN 288620-13-3 HCA
- CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-
ethenylbenzene (9CI) (CA INDEX NAME)
- CM 1
- CRN 288620-12-2
- CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



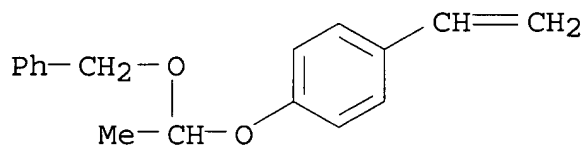
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

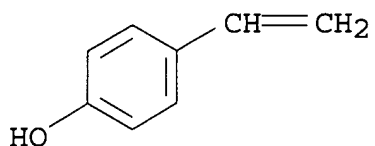
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



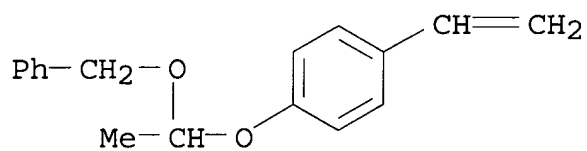
RN 289706-85-0 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and
1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

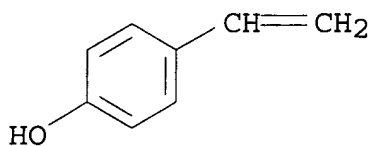
CMF C17 H18 O2



CM 2

CRN 2628-17-3

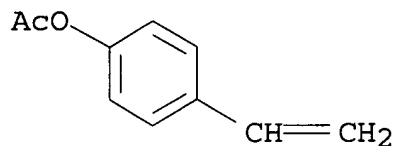
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



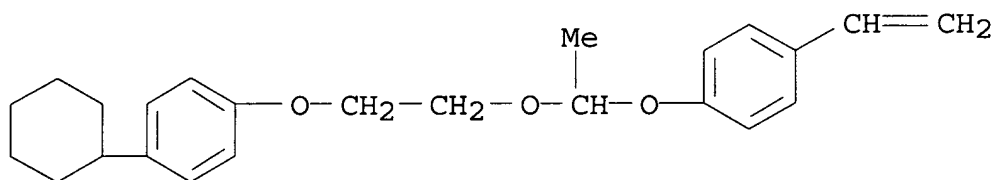
RN 326591-96-2 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 326591-95-1

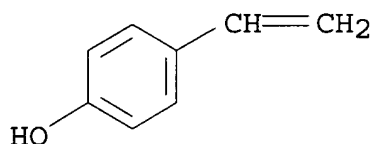
CMF C24 H30 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



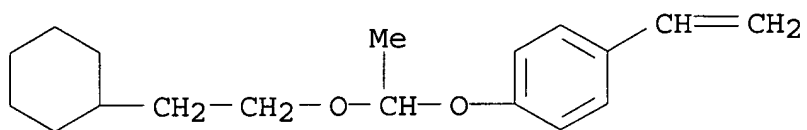
RN 372968-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

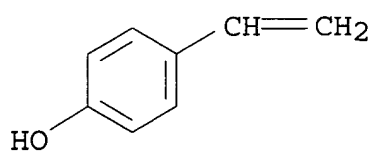
CMF C18 H26 O2



CM 2

CRN 2628-17-3

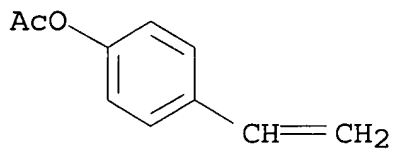
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



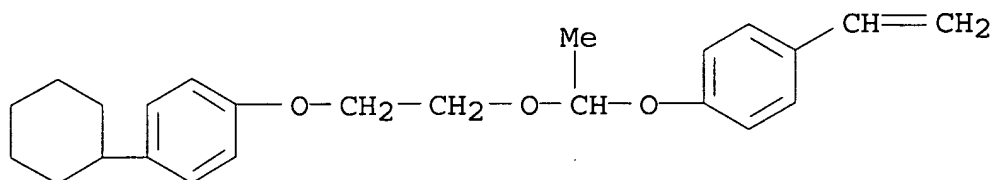
RN 503003-65-4 HCA

CN Phenol, 4-ethenyl-, polymer with 1-cyclohexyl-4-[2-[1-(4-ethenylphenoxy)ethoxy]ethoxy]benzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 326591-95-1

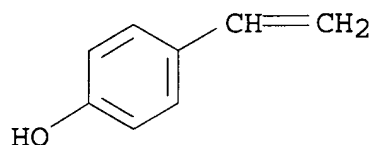
CMF C24 H30 O3



CM 2

CRN 2628-17-3

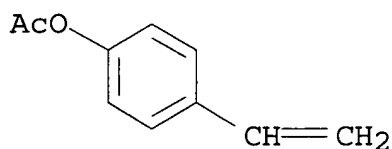
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-004

ICS C07C381-12; C08F012-14; C08F220-18; C08F220-26; C08F232-04;
C09K003-00; G03F007-038; G03F007-039; H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)ST amide linkage contg sulfonium salt **photoacid** generator
resist; sulfonamide linkage contg sulfonium salt
photoacid generator **resist**IT **Resists**(neg.-working; prepn. of sulfonium compds. having amide or
sulfonamide linkage as radiation-sensitive acid generators and

resist compns. contg. them)

IT **Resists**

(**pos.-working**; prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT **Resists**

(prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 141-07-1 3089-11-0 4356-60-9 17464-88-9 161679-94-3
162846-57-3 162846-59-5 185502-14-1

(crosslinking agent; prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 153698-63-6 153698-65-8

(dissoln. inhibitor; prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 617692-21-4 617692-22-5 617692-23-6 617692-24-7 617692-25-8
617692-26-9 617692-27-0 617692-29-2 617692-31-6 617692-33-8
617692-34-9 617692-36-1 617692-38-3 617692-40-7 617692-42-9
617692-44-1 617692-46-3 617692-47-4 617692-49-6 617692-51-0
617692-53-2 617692-55-4 617692-57-6

(prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 617692-19-0P

(prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 110-01-0, Tetrahydrothiophene 110-89-4, Piperidine, reactions
14104-20-2, Silver tetrafluoroborate 29420-49-3, Potassium
nonafluorobutanesulfonate

(prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 1440-60-4P, N-Chloroacetylpiperidine 617692-18-9P

(prepn. of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and **resist** compns. contg. them)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with
poly(hydroxystyrene) 129674-22-2P 143336-94-1P 159296-87-4P

177034-73-0P 177034-75-2P 199432-82-1P 200808-68-0P
228101-60-8P 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-
adamantyl methacrylate copolymer **288620-13-3P**
288620-15-5P 289623-64-9P **289706-85-0P**
312620-54-5P 325143-38-2P **326591-96-2P** 359635-35-1P
366808-82-4P 370866-39-0P **372968-15-5P** 391232-36-3P
398140-38-0P 398140-43-7P 398140-45-9P 398140-57-3P
398140-59-5P 398140-68-6P 398140-69-7P 398140-77-7P
398140-80-2P 405509-19-5P 406702-00-9P 430437-18-6P
459418-30-5P 482609-97-2P **503003-65-4P** 508210-04-6P
521303-15-1P 521303-16-2P 524699-47-6P 574735-94-7P
594855-58-0P 607710-65-6P 607710-66-7P 607710-67-8P
607710-68-9P 607710-69-0P 607710-70-3P 607710-71-4P
607710-72-5P 607710-73-6P 607710-76-9P 607710-77-0P
610300-92-0P 610300-96-4P 610300-97-5P 610300-98-6P
610301-00-3P 610301-01-4P 610301-03-6P 610301-04-7P
610301-05-8P 615278-35-8P 617692-20-3P

(prepn. of sulfonium compds. having amide or sulfonamide linkage
as radiation-sensitive acid generators and **resist**
compns. contg. them)

IT 24979-69-9 185405-14-5 321164-59-4 345212-27-3
(prepn. of sulfonium compds. having amide or sulfonamide linkage
as radiation-sensitive acid generators and **resist**
compns. contg. them)

IT 24979-70-2P, VP 15000
(reaction products with Et vinyl ether; prepn. of sulfonium
compds. having amide or sulfonamide linkage as
radiation-sensitive acid generators and **resist** compns.
contg. them)

L28 ANSWER 6 OF 14 HCA COPYRIGHT 2006 ACS on STN

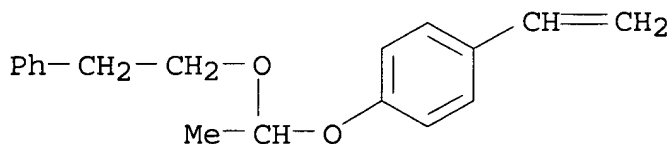
138:409368 **Positive-working resist**

composition showing excellent sensitivity, resolution, and pattern
profile. Takahashi, Omote; Yasunami, Shoichiro (Fuji Photo Film
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003149800 A2
20030521, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
JP 2001-346121 20011112.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

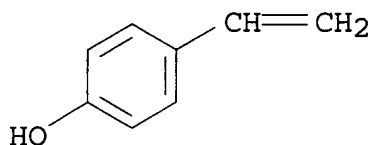
- AB The title **pos.-working resist** compn., sensitive to an electron beam, x-ray, and 150-250 nm excimer laser, comprises (A) an acid generator represented by I (W = CH₂, CYH, NH; Y = aryl, alkyl; R1a-8a = H, halo, OH, thiol, nitro, cyano, carboxyl, amino, alkyl, alkoxy), II (R1-15 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. **alkylsulfonic acid**, **benzenesulfonic acid**, **naphthalenesulfonic acid**, **anthracenesulfonic acid**), III (R16-27 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. **alkylsulfonic acid**, **benzenesulfonic acid**, **naphthalenesulfonic acid**, **anthracenesulfonic acid**), or IV (R28-37 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. **alkylsulfonic acid**, **benzenesulfonic acid**, **naphthalenesulfonic acid**, **anthracenesulfonic acid**), and (B) a polymer which is insol. or difficult sol. to an alk. aq. soln. and becomes sol. to the alk. aq. soln. upon an interaction with the generated acid, and optionally (C) a N-contg. base compd.
- IT 279244-37-0 288620-13-3 359434-80-3
(acid decomposable polymer; **pos.-working resist** compn. showing excellent sensitivity, resoln., and pattern profile)
- RN 279244-37-0 HCA
- CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)
- CM 1
- CRN 246157-37-9
- CMF C18 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



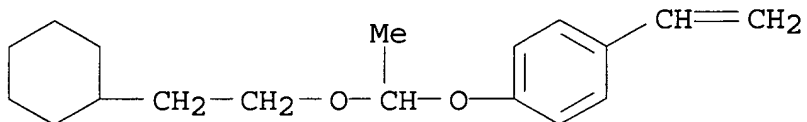
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

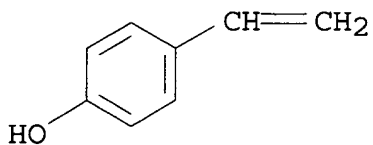
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



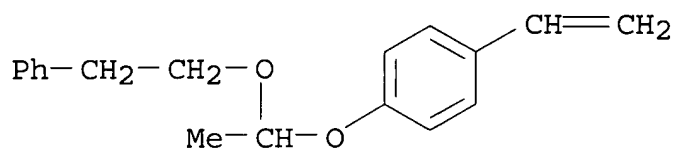
RN 359434-80-3 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

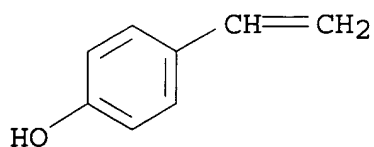
CMF C18 H20 O2



CM 2

CRN 2628-17-3

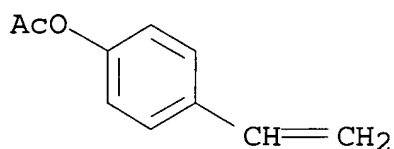
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-004

ICS C07C025-18; C07C381-12; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **pos working resist** compn acidgenerator chem amplified; electron beam **resist** compn**pos working** acid generator; x ray **resist**compn **pos working** acid generator;

photoresist compn pos working

photoacid generator semiconductor device fabrication

IT Positive **photoresists**

(chem. amplified; **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT Semiconductor device fabrication

(**pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile for)

IT Electron beam **resists**

X-ray **resists**

(**pos.-working**, chem. amplified; **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT 100-97-0, Hexamethylenetetramine, uses 110-89-4, Piperidine, uses 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine 2002-16-6, Phenylguanidine 3001-72-7, 1,5-Diazabicyclo[4.3.0]non-5-ene 24544-04-5, 2,6-Diisopropylaniline 122936-95-2, 1,8-Diazabicyclo[4.3.0]non-5-ene 529510-73-4, CHME-TU

(N-contg. base compd. in **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT 123589-22-0 258871-96-4 279244-37-0 288620-13-3 359434-80-3

(acid decomposable polymer; **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT 144317-44-2 270563-93-4 270563-96-7 514846-95-8 514846-96-9
514846-98-1 514847-00-8 514847-02-0 514847-04-2 514847-06-4
514847-08-6 514847-10-0 514847-12-2 514847-15-5 528853-06-7
528853-07-8 528853-09-0 528853-11-4

(acid generator; **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT 153698-46-5P 514846-94-7P

(acid generator; **pos.-working resist** compn. showing excellent sensitivity, resolu., and pattern profile)

IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, VP 8000, reaction products with di-tert-Bu bicarbonate 119359-85-2P 125325-82-8P

142952-62-3P 158593-28-3P 160309-96-6P, p-Acetoxystyrene-tert-butyl methacrylate copolymer 196709-91-8P 426832-91-9P 528853-12-5P

(prepn. of acid decomposable polymer for **pos.-working resist** compn. showing excellent sensitivity, resoln., and pattern profile)

IT 258341-98-9P

(prepn. of acid generator for **pos.-working resist** compn. showing excellent sensitivity, resoln., and pattern profile)

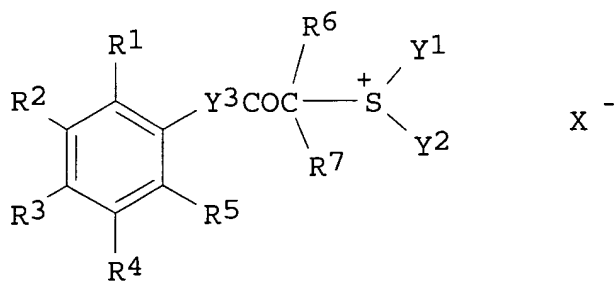
IT 75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonylchloride 2049-95-8, tert-Amylbenzene 7758-05-6, Potassium iodate 10133-81-0, Thioxanthene 10 oxide 12027-06-4, Ammonium iodide 514846-93-6

(prepn. of acid generator for **pos.-working resist** compn. showing excellent sensitivity, resoln., and pattern profile)

L28 ANSWER 7 OF 14 HCA COPYRIGHT 2006 ACS on STN

138:145067 Positive radiation-sensitive compositions having high sensitivity and high resolution. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003035948 A2 20030207, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-141737 20020516. PRIORITY: JP 2001-148006 20010517.

GI



AB The compns. contain (A) ≥ 1 compds. generating acids by actinic ray (DUV, electron beam, x-ray, ionic ray) irradiation and represented by general formula I (R_1 - R_5 = H, alkyl, alkoxy, NO_2 , halo, alkoxycarbonyl, aryl; ≥ 2 of R_1 - R_5 may be bonded to each

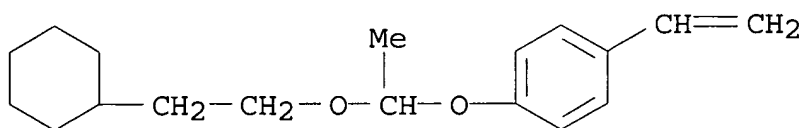
other and form ring structure; R6, R7 = H, alkyl, CN, aryl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom.-contg. arom. group; Y1 and Y2 may be bonded to each other and form ring; Y3 = single bond or divalent linking group; X- = non-nucleophilic anion; ≥ 1 of R1-R5 and Y1 and/or Y2 are bonded to each other and form ring or ≥ 1 of R1-R5 and R6 and/or R7 are bonded to each other and form ring; the compd. may bear ≥ 2 of the structure I by bonding via a linking group at desired positions selected from R1-R7 or Y1 or Y2) and (B) resins bearing groups which can be decompd. by acids and increase soly. in alkali developers. In another alternative, the compns. contain A, (C) low mol.-wt. dissoln. inhibitors with mol. wt. ≤ 3000 and bearing groups which can be decompd. by acids and increase soly. in alkali developers, and (D) resins which are insol. in water and sol. in alkali developers. The compns. are useful for fabrication of lithog. plates, IC, circuit boards for liq. crystals and thermal heads, etc.

- IT 288620-13-3 288620-15-5, p-(1-Benzyloxyethoxy)styrene-p-hydroxystyrene copolymer
 289706-85-0, p-Acetoxystyrene-p-(1-benzyloxyethoxy)styrene-p-hydroxystyrene copolymer 325143-37-1, p-tert-Butylstyrene-p-[1-(cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene copolymer
 (base polymer; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resolu.)
- RN 288620-13-3 HCA
- CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

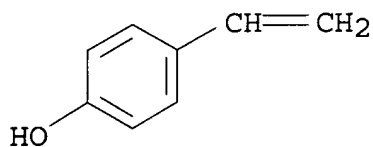
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



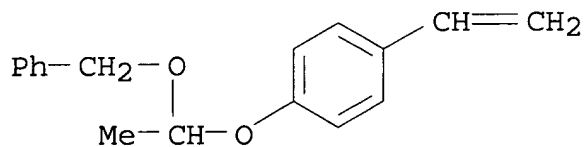
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

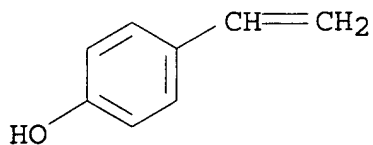
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



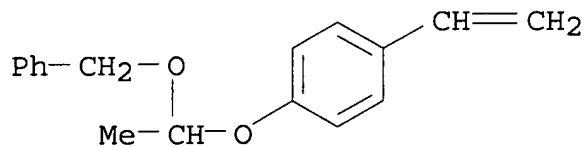
RN 289706-85-0 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

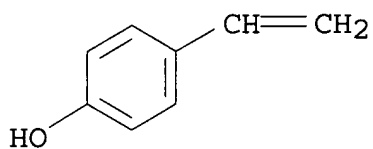
CMF C17 H18 O2



CM 2

CRN 2628-17-3

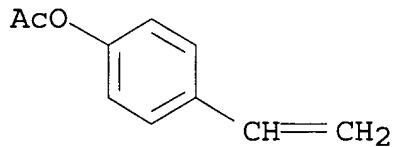
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



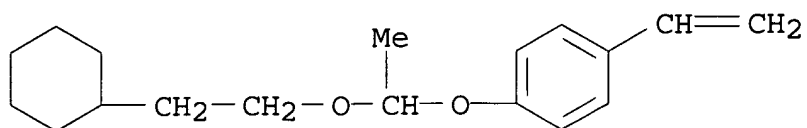
RN 325143-37-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

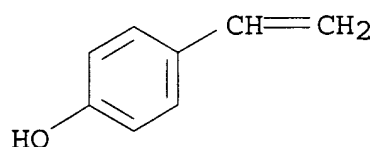
CMF C18 H26 O2



CM 2

CRN 2628-17-3

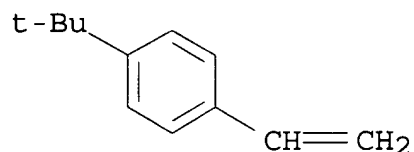
CMF C8 H8 O



CM 3

CRN 1746-23-2

CMF C12 H16



IC ICM G03F007-004

ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos DUV **resist photoacid** generator; thioanisole
 chloroacetic acid chloride reaction **photoacid** generator;
 deep UV **resist pos photoacid** generator;
 radiation sensitive **resist pos photoacid**
 generator; cyclic ketone silyl enol ether sulfoxide reaction;
 electron beam **resist pos photoacid** generator;
 chem amplified **resist pos photoacid** generator;

tetralon enol silyl ether sulfoxide reaction

IT Positive **photoresists**

(UV; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resolu.)

IT Positive **photoresists**

(chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resolu.)

IT Electron beam **resists**

(**pos.-working**; chem.-amplified **pos.** radiation-sensitive compns. having high sensitivity and high resolu.)

IT 24979-69-9, Poly(m-hydroxystyrene) 24979-70-2,
Poly(p-hydroxystyrene) 24979-74-6, p-Hydroxystyrene-styrene
copolymer 125325-82-8 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-
hydroxystyrene copolymer 199432-82-1 **288620-13-3**
288620-15-5, p-(1-Benzyloxyethoxy)styrene-p-hydroxystyrene
copolymer **289706-85-0**, p-Acetoxystyrene-p-(1-
benzyloxyethoxy)styrene-p-hydroxystyrene copolymer
325143-37-1, p-tert-Butylstyrene-p-[1-
(cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene copolymer
422508-76-7

(base polymer; chem.-amplified pos. radiation-sensitive compns.
having high sensitivity and high resolu.)

IT 100-68-5, Thioanisole 29059-07-2, Tetralon

(**photoacid** generator prepn. from; chem.-amplified pos.
radiation-sensitive compns. having high sensitivity and high
resolu.)

IT 1600-44-8, Tetramethylenesulfoxide 29420-49-3, Potassium
nonafluorobutanesulfonate

(reactant in **photoacid** generator prepn.;
chem.-amplified pos. radiation-sensitive compns. having high
sensitivity and high resolu.)

L28 ANSWER 8 OF 14 HCA COPYRIGHT 2006 ACS on STN

137:13263 **Positive-working** electron beam or x-ray

resist compositions using specific combination of solvents.

Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai
Tokkyo Koho JP 2002162733 A2 **20020607**, 62 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2000-357804 20001124.

AB The **resist** compns., which show good pattern profile, high
sensitivity and resolu., and good stabilities to post coating delay
and post exposure delay, contain (a) compds. which generate acids

upon irradiation, (b) cationically polymerizable compounds, and (c) solvents comprising ≥ 1 selected from (A) chain ketones and ≥ 1 selected from (B) alkyl lactates, alkyl alkoxypropionates, acetate esters, propylene glycol monoalkyl ethers and/or (C) γ -butyrolactone, ethylene carbonate, and propylene carbonate. The compounds may additionally contain (d) organic basic compounds and (e) F-containing surfactants and/or silicone surfactants.

IT 288620-13-3DP, reaction products with poly(p-hydroxystyrene) (binder; **pos.-working** electron beam or x-ray **resist** compounds containing cationically-polymerizable monomers and ≥ 2 solvents)

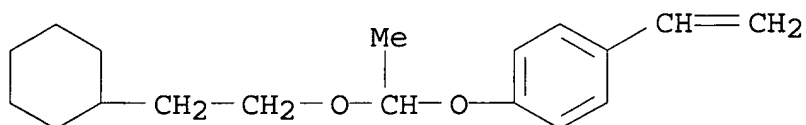
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

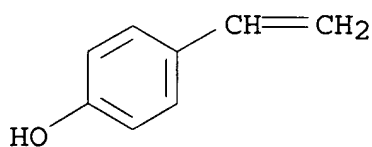
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-004

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

- ST pos x ray **resist** solvent combination; electron beam pos **resist** solvent combination; ketone lactate ester solvent pos x ray **resist**; cationically polymerizable monomer pos x ray **resist**; cyclohexyl vinyl ether pos electron beam **resist**
- IT Ketones, uses
(chain; **pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT Surfactants
(fluorine-contg. or siloxanes; **pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT Solvents
(**pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT Electron beam **resists**
X-ray **resists**
(**pos.-working**; **pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT Polysiloxanes, uses
(surfactants; **pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, VP 8000, reaction products with vinyl ethers 31814-77-4DP, 2-Phenylethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 95418-59-0DP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed 212555-24-3DP, 4-Cyclohexylphenoxyethyl vinyl ether, reaction products with poly(p-hydroxystyrene) **288620-13-3DP**, reaction products with poly(p-hydroxystyrene)
(binder; **pos.-working** electron beam or x-ray **resist** compns. contg. cationically-polymerizable monomers and ≥ 2 solvents)
- IT 24979-70-2, VP 8000 142952-62-3, p-(tert-Butoxycarbonylmethoxy)styrene-p-hydroxystyrene copolymer 147625-42-1, Poly(p-hydroxystyrene) tert-butyl carbonate 160309-96-6D, p-Acetoxystyrene-tert-butyl methacrylate copolymer, hydrolyzed 177984-03-1 422508-76-7 433289-14-6

- (binder; **pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
and ≥ 2 solvents)
- IT 110-87-2, 3,4-Dihydro-2H-pyran 5292-43-3, tert-Butyl bromoacetate
76937-83-2, $\alpha,\alpha,\alpha',\alpha',\alpha'',\alpha'',$ -
Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8,
1- $[\alpha$ -Methyl- α -(4'-hydroxyphenyl)ethyl]-4-
 $[\alpha',\alpha'$ -bis(4''-hydroxyphenyl)ethyl]benzene
148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane 153698-47-6,
Cumyl bromoacetate
(dissoln. inhibitor from; **pos.-working**
electron beam or x-ray **resist** compns. contg.
cationically-polymerizable monomers and ≥ 2 solvents)
- IT 153698-63-6P 153698-69-2P 196709-88-3P 433289-15-7P
(dissoln. inhibitor; **pos.-working** electron
beam or x-ray **resist** compns. contg.
cationically-polymerizable monomers and ≥ 2 solvents)
- IT 65-85-0, Benzoic acid, reactions
(esterification with chloroethyl vinyl ether; **pos.-**
working electron beam or x-ray **resist** compns.
contg. cationically-polymerizable monomers and ≥ 2
solvents)
- IT 1131-60-8, p-Cyclohexylphenol
(in binder polymer prepn.; **apos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
and ≥ 2 solvents)
- IT 110-75-8, 2-Chloroethyl vinyl ether
(in binder polymer prepn.; **pos.-working**
electron beam or x-ray **resist** compns. contg.
cationically-polymerizable monomers and ≥ 2 solvents)
- IT 3744-08-9P, Triphenylsulfonium iodide
(in prepn. of **photoacid** generator; **pos.-**
working electron beam or x-ray **resist** compns.
contg. cationically-polymerizable monomers and ≥ 2
solvents)
- IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide
832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7,
Diphenylsulfoxide 2049-95-8, tert-Amylbenzene 4270-70-6,
Triphenylsulfonium chloride
(in prepn. of **photoacid** generator; **pos.-**
working electron beam or x-ray **resist** compns.
contg. cationically-polymerizable monomers and ≥ 2

- solvents)
- IT 270564-02-8P, Tetramethylammonium **pentafluorobenzenesulfonate****
 *
 (*****photoacid** generator; **pos.-working**
 electron beam or x-ray **resist** compns. contg.
 cationically-polymerizable monomers and ≥ 2 solvents)
- IT 153698-46-5P, Triphenylsulfonium **pentafluorobenzenesulfonate**
 258341-98-9P 270563-93-4P 270563-96-7P
 (**pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
 and ≥ 2 solvents)
- IT 270563-92-3 279244-43-8 279244-45-0 389859-77-2 398457-16-4
 405893-16-5
 (**pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
 and ≥ 2 solvents)
- IT 41440-39-5P
 (**pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
 and ≥ 2 solvents)
- IT 484-47-9, 2,4,5-Triphenylimidazole
 (**pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
 and ≥ 2 solvents)
- IT 50-21-5D, Lactic acid, alkyl esters 57-55-6D, Propylene glycol,
 monoalkyl ethers 79-33-4D, alkyl esters 96-48-0,
 γ -Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl
 lactate 108-32-7, Propylene carbonate 110-43-0, 2-Heptanone
 123-86-4, Butyl acetate 502-44-3, ϵ -Caprolactone
 763-69-9, Ethyl 3-ethoxypropionate 765-14-0 929-37-3
 1320-67-8, Propylene glycol monomethyl ether 2182-55-0 4223-11-4
 25085-99-8, Epikote 825 26256-87-1, 2,5,8,11-Tetraoxatridec-12-ene
 50856-25-2 92268-17-2 160768-40-1 212555-24-3
 (**pos.-working** electron beam or x-ray
resist compns. contg. cationically-polymerizable monomers
 and ≥ 2 solvents)

L28 ANSWER 9 OF 14 HCA COPYRIGHT 2006 ACS on STN

136:393271 Electron beam- or x-ray **resist** compositions with
 high sensitivity and resolution. Kodama, Kunihiro; Aogo, Toshiaki
 (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 2002148788 A2 **20020522**, 65 pp. (Japanese). CODEN:

JKXXAF. APPLICATION: JP 2000-343818 20001110.

AB The compn. contains a **photoacid** generator (A) contg.
 ≥ 1 disulfone compd. and sulfonium and/or iodonium
sulfonate and a polymer (B) bearing an acid-degradable group
 for increasing soly. in an alkali developer soln. The compn.,
 showing good PSD (post coating delay) stability, gives a pattern
 with good profile.

IT 288620-13-3 288620-15-5 289706-85-0
 325143-37-1 359434-80-3 372968-15-5
 387382-45-8

(alkali-sol. polymer; electron beam- or x-ray **resist**
 compns. contg. onium **sulfonates** with high sensitivity
 and resoln.)

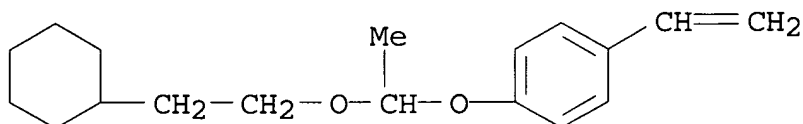
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-
 ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

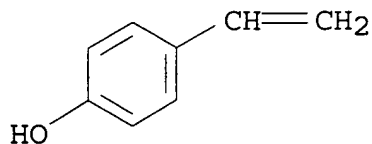
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



RN 288620-15-5 HCA

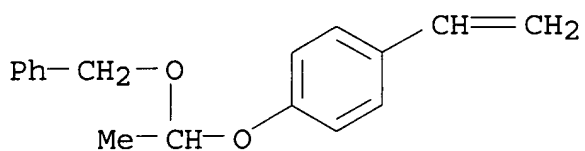
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-

(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

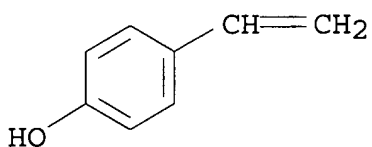
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



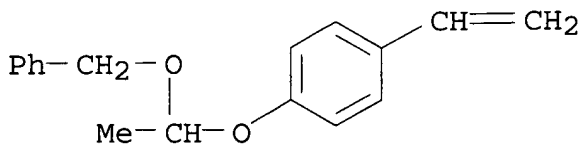
RN 289706-85-0 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and
1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

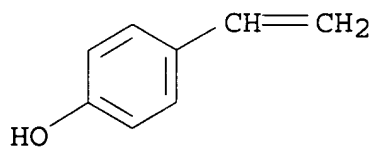
CMF C17 H18 O2



CM 2

CRN 2628-17-3

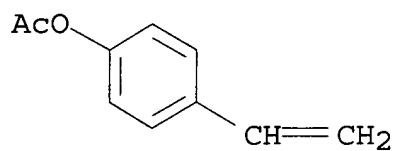
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



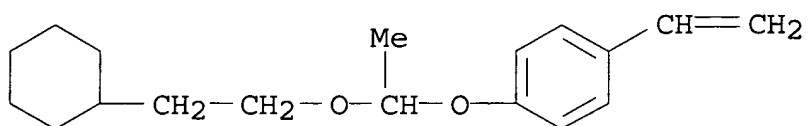
RN 325143-37-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

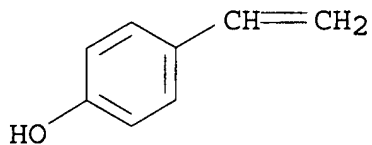
CMF C18 H26 O2



CM 2

CRN 2628-17-3

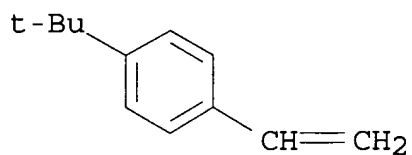
CMF C8 H8 O



CM 3

CRN 1746-23-2

CMF C12 H16



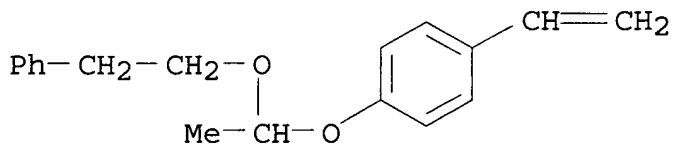
RN 359434-80-3 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and
1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

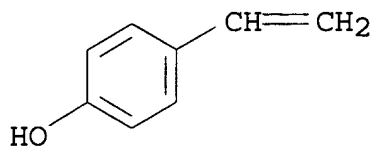
CMF C18 H20 O2



CM 2

CRN 2628-17-3

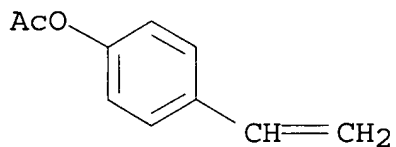
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



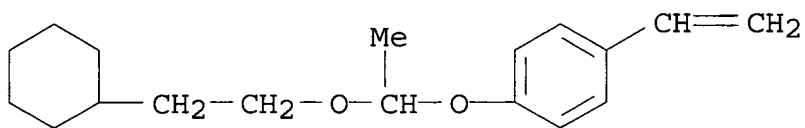
RN 372968-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

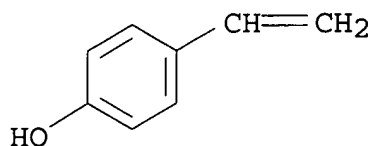
CMF C18 H26 O2



CM 2

CRN 2628-17-3

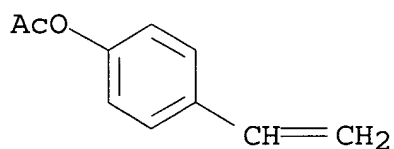
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



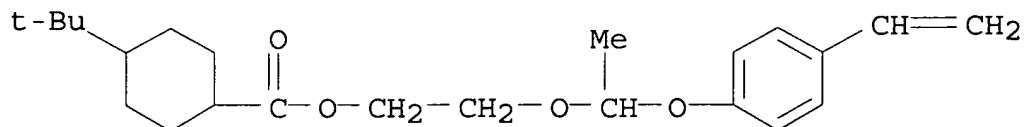
RN 387382-45-8 HCA

CN Cyclohexanecarboxylic acid, 4-(1,1-dimethylethyl)-, 2-[1-(4-ethenylphenoxy)ethoxy]ethyl ester, polymer with 4-ethenylphenol and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 334643-35-5

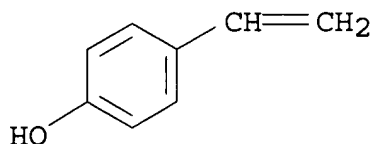
CMF C23 H34 O4



CM 2

CRN 2628-17-3

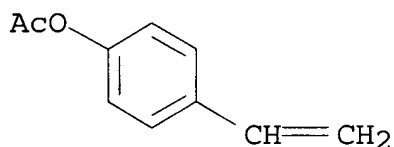
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



- IC ICM G03F007-004
ICS G03F007-004; C08K005-00; C08L025-18; C08L061-06; C08L101-02;
G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38
- ST pos electron beam **resist** high sensitivity; sulfonium
photoacid generator x ray **resist**; **resist**
post coating delay stability
- IT Electron beam **resists**
X-ray **resists**
(neg.-working; electron beam- or x-ray **resist** compns.
contg. onium **sulfonates** with high sensitivity and
resoln.)
- IT Phenolic resins, uses
(novolak, cresol, alkali-sol. polymer; electron beam- or x-ray
resist compns. contg. onium **sulfonates** with
high sensitivity and resoln.)
- IT Electron beam **resists**
X-ray **resists**
(pos.-working; electron beam- or x-ray
resist compns. contg. onium **sulfonates** with
high sensitivity and resoln.)

- IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxystyrene 24979-70-2DP, VP 8000, reaction products with di-tert-Bu dicarbonate 86830-84-4DP, Poly(5-vinyl-1,3-benzodioxole), hydrolyzed 95418-59-0DP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed 103983-46-6DP, Ether, 2-cyclohexylethyl vinyl, reaction products with polyhydroxystyrene 185405-14-5P, 4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer 398457-06-2P, Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with 4-ethenyl-1,2-benzenediol and 5-ethenyl-1,3-benzodioxole 426832-90-8DP, hydrolyzed 426832-91-9P
(alkali-sol. polymer; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 24979-70-2, VP 8000 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 129674-22-2 158593-28-3 199432-82-1 200808-68-0 216258-44-5 **288620-13-3 288620-15-5**
289706-85-0 325143-37-1 359434-80-3
372968-15-5 387382-45-8 387382-49-2
398457-05-1
(alkali-sol. polymer; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 162846-57-3P
(crosslinking agent; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 3089-11-0P 17464-88-9P 32449-09-5P 161679-94-3P 185502-11-8P
185502-14-1P 185502-15-2P 197087-74-4P
(crosslinking agent; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 153698-63-6 153698-65-8
(dissoln. inhibitor; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 110726-28-8, 1- $[\alpha$ -Methyl- α -(4'-hydroxyphenyl)ethyl]-4- $[\alpha',\alpha'$ -bis(4''-hydroxyphenyl)ethyl]benzene
(for dissoln. inhibitor or crosslinking agent prepn.; electron beam- or x-ray **resist** compns. contg. onium **sulfonates** with high sensitivity and resoln.)
- IT 76937-83-2, $\alpha,\alpha,\alpha',\alpha',\alpha'',\alpha''$ -

Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 148452-55-5,
1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane
(for dissoln. inhibitor prepn.; electron beam- or x-ray
resist compns. contg. onium **sulfonates** with
high sensitivity and resoln.)

IT 10409-07-1 13603-79-7 14159-45-6 22040-25-1 58113-98-7
91222-47-8 124737-97-9 138529-81-4 138529-84-7 144317-44-2
153698-46-5 153698-66-9 154220-26-5 194712-93-1 197447-16-8
258341-98-9 258872-05-8 270563-93-4 270563-96-7 279244-50-7
297742-41-7 389859-76-1 398141-18-9 426832-92-0 426832-93-1
426832-94-2 426832-95-3
(**photoacid** generator; electron beam- or x-ray
resist compns. contg. onium **sulfonates** with
high sensitivity and resoln.)

L28 ANSWER 10 OF 14 HCA COPYRIGHT 2006 ACS on STN

136:393268 **Positive-working resist**

compositions containing **sulfonic** acid generators. Kodama,
Kunihiko; Nishiyama, Fumiyuki (Fuji Photo Film Co., Ltd., Japan).
Jpn. Kokai Tokkyo Koho JP 2002139838 A2 **20020517**, 44 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-332802 20001031.

AB The compns., which show high sensitivity, high resoln., and improved
process latitude, and give **resist** pattern with good
rectangular profile, contain (a) compds. which generate
sulfonic acids having alkyl group substituted with ≥ 1
F upon irradiation with actinic ray and (b) resins having a repeating
unit $[\text{CH}_2\text{CHR}_1(\text{C}_6\text{H}_4\text{OCR}_2\text{R}_3\text{OR})]$ [$\text{R}_1 = \text{H}$, alkyl, halo; $\text{R}_2, \text{R}_3 = \text{H}$,
alkyl; $\text{R} = (\text{un})\text{substituted } \text{C}_{\geq 5} \text{ alicyclic hydrocarbyl}$,
 $(\text{un})\text{substituted } \text{C}_{\geq 6} \text{ aryl}$, $(\text{un})\text{substituted } \text{C}_{\geq 4}$
heterocyclyl, $(\text{CH}_2)_n\text{XR}_4$ ($n = 1-3$; $\text{X} = \text{direct bond, linking group}$; R_4
 $= \text{any group given for R}$); ≥ 2 of R , R_2 , and R_3 may be bonded
together to form a ring] which are decomposed by acids and show
increased sol. in an alk. developer. The compns. may additionally contain
(c) dissoln. inhibitors with mol. wt. ≤ 3000 which have
acid-decomposable group and show increased dissoln. rate in an alk.
developer upon action of acids, (d) N-contg. basic compds. and/or
basic onium salts, and (e) F-contg. surfactants and/or silicone
surfactants.

IT **199432-81-0P 288620-15-5P**, p-(1-
Benzyloxyethoxy)styrene-p-hydroxystyrene copolymer
289706-85-0P, p-Acetoxystyrene-p-hydroxystyrene-p-(1-
phenethyloxyethoxy)styrene copolymer **325143-37-1P**,

p-tert-Butylstyrene-p-[1-(cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene copolymer 326592-04-5P 425671-10-9P
 , p-Acetoxystyrene-p-[1-(4-tert-butylcyclohexyl)carboxyethoxy]styrene-p-hydroxystyrene copolymer

(pos.-working resist compns. contg.

fluoroalkanesulfonic acid generators and

poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)

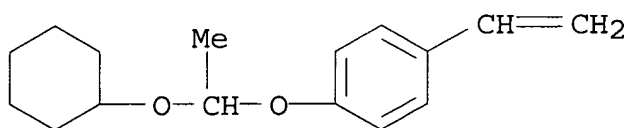
RN 199432-81-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

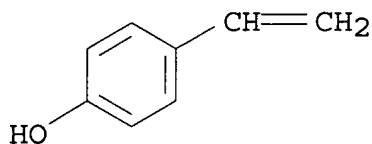
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



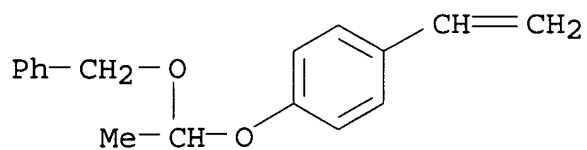
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

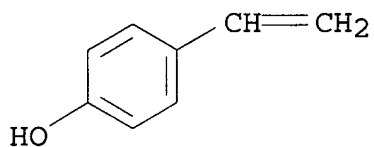
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



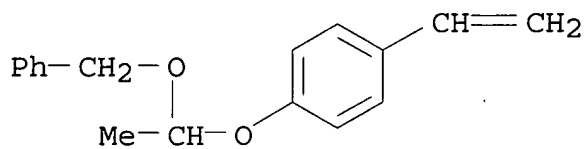
RN 289706-85-0 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and
1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

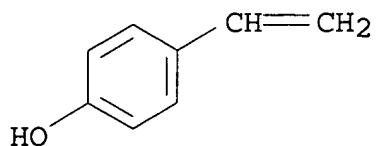
CMF C17 H18 O2



CM 2

CRN 2628-17-3

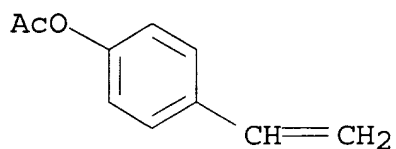
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



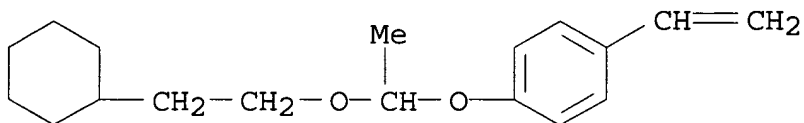
RN 325143-37-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

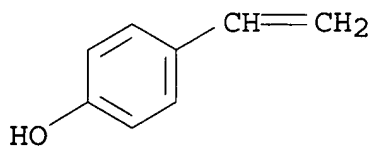
CMF C18 H26 O2



CM 2

CRN 2628-17-3

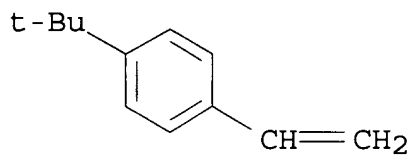
CMF C8 H8 O



CM 3

CRN 1746-23-2

CMF C12 H16



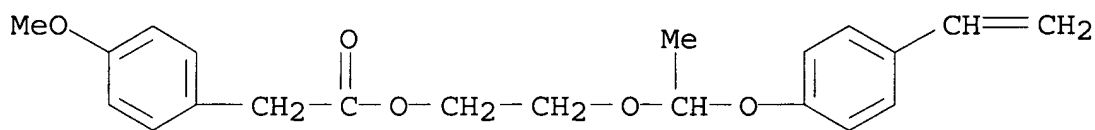
RN 326592-04-5 HCA

CN Benzeneacetic acid, 4-methoxy-, 2-[1-(4-ethenylphenoxy)ethoxy]ethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 326592-03-4

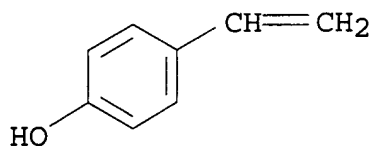
CMF C21 H24 O5



CM 2

CRN 2628-17-3

CMF C8 H8 O



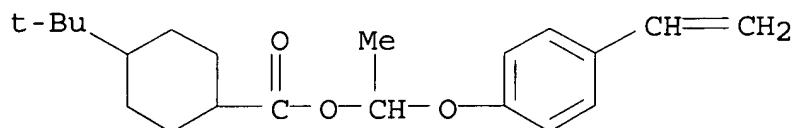
RN 425671-10-9 HCA

CN Cyclohexanecarboxylic acid, 4-(1,1-dimethylethyl)-,
1-(4-ethenylphenoxy)ethyl ester, polymer with 4-ethenylphenol and
4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 425671-09-6

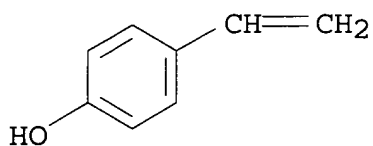
CMF C21 H30 O3



CM 2

CRN 2628-17-3

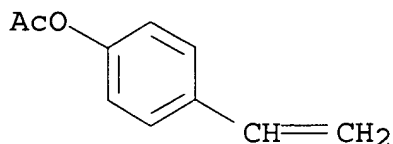
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



- IC ICM G03F007-039
ICS C08F012-24; C08K005-42; C08L025-18; C08L083-04; G03F007-004;
H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
- ST **pos resist fluoroalkanesulfonic acid generator**
polyhydroxystyrene ether
- IT **Positive photoresists**
(UV, far-; **pos.-working resist**
compns. contg. **fluoroalkanesulfonic acid generators** and
poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
- IT **Electron beam resists**
Resists
(**pos.-working; pos.-working**
resist compns. contg. **fluoroalkanesulfonic acid**
generators and poly(hydroxystyrenes) having alicyclic or
(hetero)arom. group)
- IT 153698-63-6
(dissoln. inhibitor; **pos.-working**
resist compns. contg. **fluoroalkanesulfonic acid**
generators and poly(hydroxystyrenes) having alicyclic or
(hetero)arom. group)
- IT 3744-08-9P, Triphenylsulfonium iodide
(in prepn. of **photoacid generator; pos.-**
working resist compns. contg.
fluoroalkanesulfonic acid generators and
poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
- IT 71-43-2, Benzene, reactions 945-51-7, Diphenyl sulfoxide
1763-23-1, Perfluoro-n-octanesulfonic acid 4270-70-6,
Triphenylsulfonium chloride 25628-17-5 52908-55-1 194999-85-4
(in prepn. of **photoacid generator; pos.-**
working resist compns. contg.
fluoroalkanesulfonic acid generators and
poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
- IT 14159-45-6P 39153-56-5P 138529-81-4P 138529-84-7P

144089-15-6P, Triphenylsulfonium **perfluorooctanesulfonate**
 153698-46-5P 179419-32-0P 193345-23-2P 197447-16-8P
 241806-75-7P 252937-66-9P 297742-41-7P 338445-29-7P
 338445-31-1P 365971-70-6P 365971-84-2P 365971-85-3P
 376357-77-6P 376357-89-0P 389859-76-1P 405284-05-1P
 425670-82-2P 425670-97-9P

(pos.-working resist compns. contg.

fluoroalkanesulfonic acid generators and

poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)

IT 66003-78-9 144317-44-2 213740-80-8 241806-76-8 258872-05-8
 284474-28-8 312386-77-9 391232-40-9 398141-17-8 398141-18-9
 414911-27-6 414911-28-7 414911-33-4 425670-52-6 425670-55-9
 425670-64-0 425670-70-8 425670-73-1 425670-76-4

(pos.-working resist compns. contg.

fluoroalkanesulfonic acid generators and

poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)

IT 102-82-9P, Tri-n-butylamine 108-24-7DP, Acetic anhydride, reaction
 products with poly(p-hydroxystyrene) ethers 109-53-5DP, Isobutyl
 vinyl ether, reaction products with Bu acrylate-hydroxystyrene
 copolymer 926-02-3DP, tert-Butyl vinyl ether, reaction products
 with poly(hydroxystyrene) and cyclohexaneethanol 3040-44-6P,
 1-Piperidineethanol 4442-79-9DP, Cyclohexaneethanol, reaction
 products with poly(hydroxystyrene) and tert-Bu vinyl ether
 24979-70-2DP, VP 8000, reaction products with cyclohexaneethanol,
 tert-Bu vinyl ether, and 147625-42-1P, Poly(p-hydroxystyrene)
 tert-butyl carbonate 158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-
 hydroxystyrene copolymer 159296-87-4DP, tert-Butyl
 acrylate-p-vinylphenol copolymer, reaction products with iso-Bu
 vinyl ether 159296-87-4P, tert-Butyl acrylate-p-vinylphenol
 copolymer **199432-81-0P** 199432-82-1P,
 p-Hydroxystyrene-p-(1-isobutoxyethoxy)styrene copolymer
 200808-68-0P, tert-Butyl acrylate-p-hydroxystyrene-styrene copolymer
 287381-58-2P **288620-15-5P**, p-(1-Benzoyloxyethoxy)styrene-p-
 hydroxystyrene copolymer **289706-85-0P**,
 p-Acetoxystyrene-p-hydroxystyrene-p-(1-phenethyloxyethoxy)styrene
 copolymer **325143-37-1P**, p-tert-Butylstyrene-p-[1-
 (cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene copolymer
326592-04-5P 398457-05-1P **425671-10-9P**,
 p-Acetoxystyrene-p-[1-(4-tert-butylcyclohexyl)carboxyethoxy]styrene-
 p-hydroxystyrene copolymer

(pos.-working resist compns. contg.

fluoroalkanesulfonic acid generators and

poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)
 IT 304-88-1, N-Benzoyl-N-phenylhydroxylamine 484-47-9,
 2,4,5-Triphenylimidazole 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-
 nonene 19600-49-8, Triphenylsulfonium acetate
 (pos.-working resist compns. contg.
 fluoroalkanesulfonic acid generators and
 poly(hydroxystyrenes) having alicyclic or (hetero)arom. group)

L28 ANSWER 11 OF 14 HCA COPYRIGHT 2006 ACS on STN

136:377471 **Positively working** radiation-sensitive

resist composition with improved coatability. Kanna,
 Shinichi; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn.
 Kokai Tokkyo Koho JP 2002131898 A2 **20020509**, 63 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-327424 20001026.

AB The compn. contains (A) polymers increasing soly. in alkali
 developers by decompn. with acids, (B) acid generator by irradiation of
 actinic ray, (C) org. basic compds., (D) solvents, and (E) 50-5000
 ppm surfactants, preferably having fluoroalkyl group in the mol., to
 get discolored by irradiation of actinic ray. The compn. prevents
 generation of standing wave.

IT **288620-15-5P**, p-(1-Benzyloxyethoxy)styrene-p-hydroxystyrene
 copolymer
 (pos.-working radiation-sensitive
resist compn. contg. fluoroalkyl-substituted discolorable
 surfactant with improved coatability)

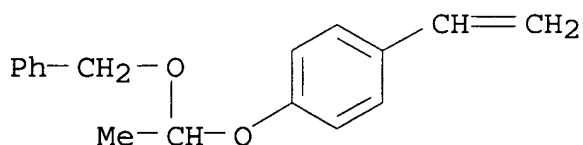
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-
 (phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

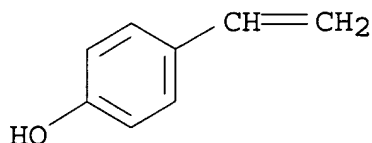
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



- IC ICM G03F007-004
ICS G03F007-004; C08K005-00; C08L101-12; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos radiation sensitive resit coatability standing wave prevention; fluoroalkyl discolorable surfactant radiation sensitive **resist**
- IT **Positive photoresists**
Surfactants
(**pos.-working** radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)
- IT 13891-29-7, Triphenylsulfonium p-**toluenesulfonate**
138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 197447-16-8
422508-79-0
(**photoacid** generator; **pos.-working** radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)
- IT 109-53-5DP, Isobutyl vinyl ether, reaction products with Bu acrylate-hydroxystyrene copolymer 926-02-3DP, tert-Butyl vinyl ether, reaction products with hydroxystyrene polymer and cyclohexaneethanol 4442-79-9DP, Cyclohexaneethanol, reaction products with hydroxystyrene polymer and Bu vinyl ether 24979-70-2DP, VP 8000, reaction products with Bu vinyl ether and cyclohexaneethanol 121273-79-8P 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer 158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer 199432-82-1P, p-Hydroxystyrene-p-(1-isobutoxyethoxy)styrene copolymer 200808-68-0P, tert-Butyl acrylate-p-hydroxystyrene-styrene copolymer **288620-15-5P**, p-(1-

Benzyloxyethoxy)styrene-p-hydroxystyrene copolymer 325143-38-2P

365971-61-5P 365971-64-8P 365971-70-6P 365971-71-7P

365971-72-8P 376600-58-7P 387382-49-2P 422508-57-4P

422508-61-0P 422508-62-1P 422508-64-3P 422508-65-4P

422508-66-5P 422508-67-6P 422508-71-2P 422508-72-3P

422508-74-5P 422508-76-7P 422508-77-8P 422508-78-9P

(**pos.-working** radiation-sensitive

resist compn. contg. fluoroalkyl-substituted discolorable
surfactant with improved coatability)

IT 524-38-9, N-Hydroxyphthalimide 3744-08-9, Triphenylsulfonium
iodide 141784-10-3, 2-Nitro-6-trifluoromethylbenzyl alcohol
365971-60-4

(**pos.-working** radiation-sensitive

resist compn. contg. fluoroalkyl-substituted discolorable
surfactant with improved coatability)

IT 102-82-9, Tributylamine 484-47-9, 2,4,5-Triphenylimidazole
3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 312386-77-9

422508-59-6 422508-63-2 422508-69-8

(**pos.-working** radiation-sensitive

resist compn. contg. fluoroalkyl-substituted discolorable
surfactant with improved coatability)

L28 ANSWER 12 OF 14 HCA COPYRIGHT 2006 ACS on STN

136:191686 Electron beam or x-ray **resist** composition

containing **sulfonate** salt **photoacid** generator.

Kodama, Kunihiro; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan).

Jpn. Kokai Tokkyo Koho JP 2002049155 A2 **20020215**, 65 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-233216 20000801.

AB The compn. contains (A) ≥ 1 N-hydroxyimide **sulfonate**
esters and ≥ 1 onium **sulfonate** salts selected from
sulfonium **sulfonates** and iodonium **sulfonates** as
acid generators by electron beam or x-ray radiation and (B) base
polymers selected from (1) polymers having acid-degradable groups to
increase alkali developability for **pos. working**,
(2) low-mol.-wt. dissoln. inhibitors with mol. wt. ≤ 3000
having acid-degradable group to increase dissoln. speed in alkali
developes by acids and water-insol. and alkali-developable
polymers for **pos. working**, and (3) water-insol.
and alkali-developable polymers and acid-catalytic crosslinking
agents for neg. working. The compn. shows high sensitivity and
gives high-resoln. **resist** patterns with good post-coating
delay (PCD) stability.

IT 279244-35-8 279244-37-0 288620-13-3
 288620-15-5 289706-85-0 325143-37-1
 359434-80-3 372968-15-5 387382-45-8
 (electron beam or x-ray **resist** compn. contg.
sulfonate salt **photoacid** generator)

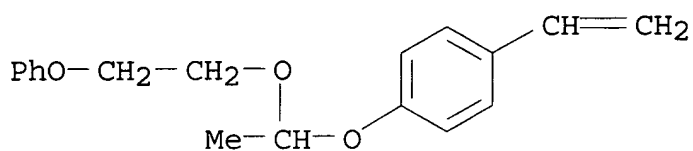
RN 279244-35-8 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenoxyethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 279244-34-7

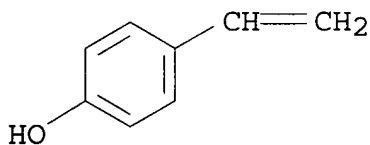
CMF C18 H20 O3



CM 2

CRN 2628-17-3

CMF C8 H8 O



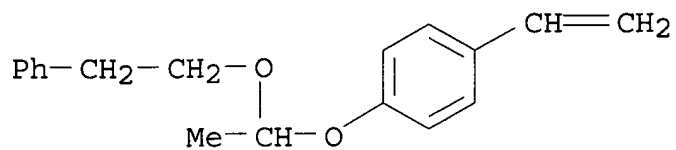
RN 279244-37-0 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

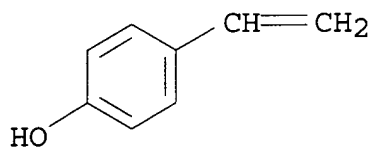
CMF C18 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



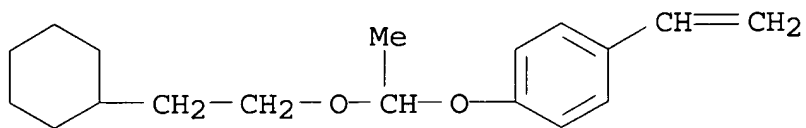
RN 288620-13-3 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

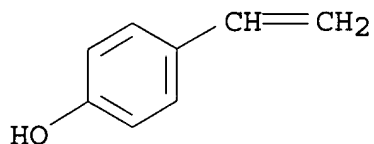
CMF C18 H26 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



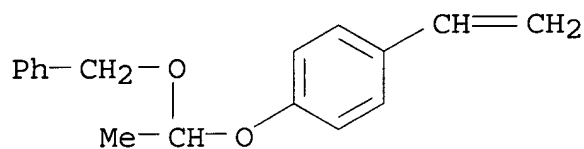
RN 288620-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

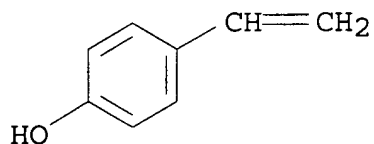
CMF C17 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



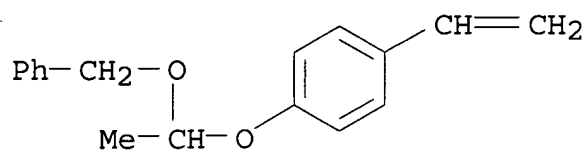
RN 289706-85-0 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and 1-ethenyl-4-[1-(phenylmethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-14-4

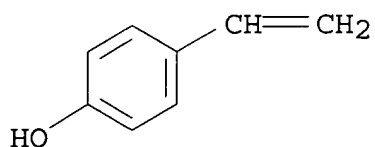
CMF C17 H18 O2



CM 2

CRN 2628-17-3

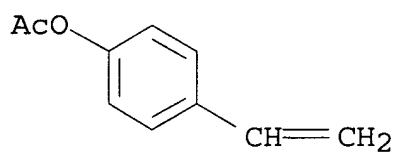
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



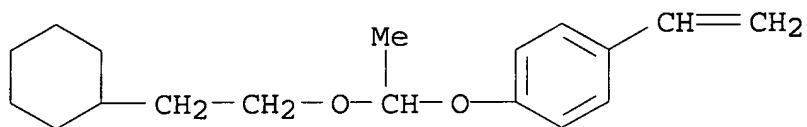
RN 325143-37-1 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 1-(1,1-dimethylethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

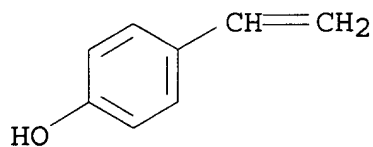
CMF C18 H26 O2



CM 2

CRN 2628-17-3

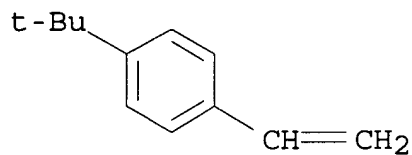
CMF C8 H8 O



CM 3

CRN 1746-23-2

CMF C12 H16



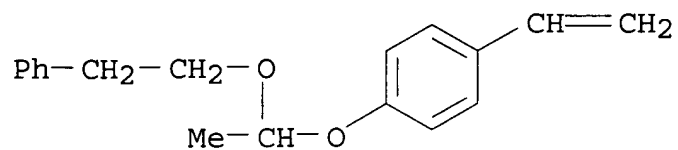
RN 359434-80-3 HCA

CN Phenol, 4-ethenyl-, polymer with 4-ethenylphenyl acetate and
1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

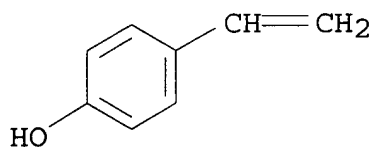
CMF C18 H20 O2



CM 2

CRN 2628-17-3

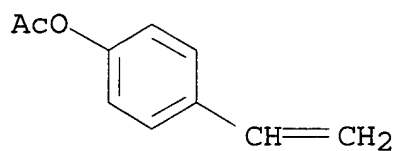
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



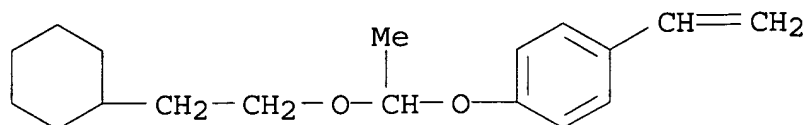
RN 372968-15-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-cyclohexylethoxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 288620-12-2

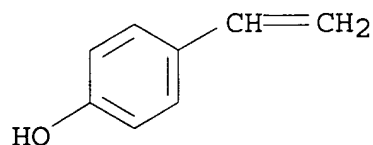
CMF C18 H26 O2



CM 2

CRN 2628-17-3

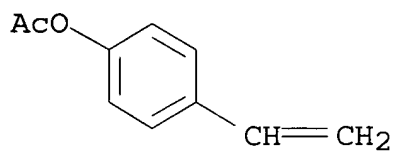
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



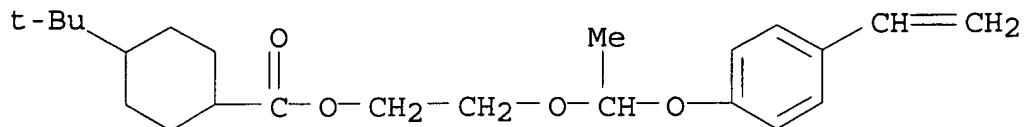
RN 387382-45-8 HCA

CN Cyclohexanecarboxylic acid, 4-(1,1-dimethylethyl)-, 2-[1-(4-ethenylphenoxy)ethoxy]ethyl ester, polymer with 4-ethenylphenol and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 334643-35-5

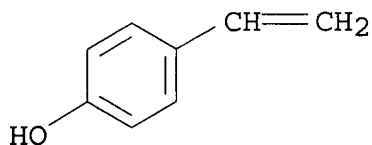
CMF C23 H34 O4



CM 2

CRN 2628-17-3

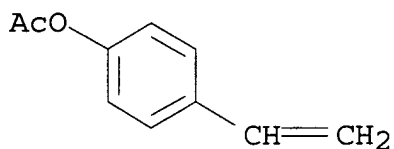
CMF C8 H8 O



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IC ICM G03F007-039

ICS C08K005-00; C08L101-00; G03F007-004; G03F007-032; G03F007-038;
H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)ST electron beam x ray **resist sulfonate** salt
photoacid generator; hydroxyimide **sulfonate** ester
photoacid generator **resist**; onium
sulfonate salt **photoacid** generator **resist**
; sulfonium iodonium **sulfonate** salt **photoacid**
generator **resist**

- IT Electron beam **resists**
X-ray **resists**
(electron beam or x-ray **resist** compn. contg.
sulfonate salt **photoacid** generator)
- IT 162846-57-3P
(crosslinking agent, methylation of; electron beam or x-ray
resist compn. contg. **sulfonate** salt
photoacid generator)
- IT 161679-94-3P
(crosslinking agent; electron beam or x-ray **resist**
compn. contg. **sulfonate** salt **photoacid**
generator)
- IT 3089-11-0 17464-88-9 32449-09-5 185502-11-8 185502-14-1
185502-15-2 197087-74-4
(crosslinking agent; electron beam or x-ray **resist**
compn. contg. **sulfonate** salt **photoacid**
generator)
- IT 153698-69-2P
(dissoln. inhibitor; electron beam or x-ray **resist**
compn. contg. **sulfonate** salt **photoacid**
generator)
- IT 153698-63-6 153698-65-8
(dissoln. inhibitor; electron beam or x-ray **resist**
compn. contg. **sulfonate** salt **photoacid**
generator)
- IT 24979-70-2DP, VP 8000, reaction products with cyclohexylphenoxyethyl
vinyl ether 86830-84-4DP, hydrolyzed 95418-59-0DP,
p-tert-Butoxystyrene-styrene copolymer, hydrolyzed 103983-46-6DP,
reaction products with polyhydroxystyrene 110134-35-5P
147625-42-1P 160309-96-6DP, p-Acetoxystyrene-tert-butyl
methacrylate copolymer, hydrolyzed 185405-11-2P 185405-14-5DP,
4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer, hydrolyzed
185405-14-5P, 4-Hydroxystyrene-5-vinyl-1,3-benzodioxole copolymer
212555-24-3DP, 4-Cyclohexylphenoxyethyl vinyl ether, reaction
products with polyhydroxystyrene 321164-59-4P 345212-27-3P
349647-01-4P 398457-06-2P 398457-07-3P 398457-08-4P
(electron beam or x-ray **resist** compn. contg.
sulfonate salt **photoacid** generator)
- IT 24979-69-9, Poly(m-hydroxystyrene) 24979-70-2, VP 15000
27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 129674-22-2
158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer
159296-87-4 199432-82-1 200808-68-0 **279244-35-8**

279244-37-0 288620-13-3 288620-15-5
 289706-85-0 325143-37-1 359434-80-3
 372968-15-5 387382-45-8 387382-49-2
 398457-05-1

(electron beam or x-ray **resist** compn. contg.
sulfonate salt **photoacid** generator)

IT 56530-39-3 57212-70-1 66003-78-9 133710-62-0 135133-15-2
 141714-82-1 144317-44-2 153698-46-5 154220-26-5 179419-32-0
 193345-23-2 194999-85-4 197447-16-8 199432-74-1 199432-79-6
 199432-80-9 258341-98-9 270563-93-4 270563-96-7 279244-50-7
 297742-41-7 398457-09-5 398457-10-8 398457-11-9 398457-12-0
 398457-13-1 398457-14-2 398457-15-3 398457-16-4

(**photoacid** generator; electron beam or x-ray
resist compn. contg. **sulfonate** salt
photoacid generator)

IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 (prepn. of crosslinking agent; electron beam or x-ray
resist compn. contg. **sulfonate** salt
photoacid generator)

IT 110-87-2, 3,4-Dihydro-2H-pyran 5292-43-3, tert-Butyl bromoacetate
 76937-83-2 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane
 153698-47-6, Cumyl bromoacetate 196709-88-3
 (prepn. of dissoln. inhibitor; electron beam or x-ray
resist compn. contg. **sulfonate** salt
photoacid generator)

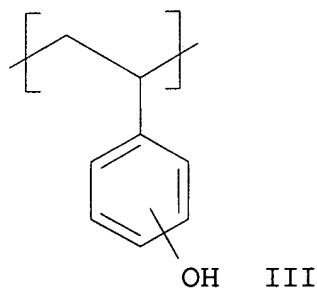
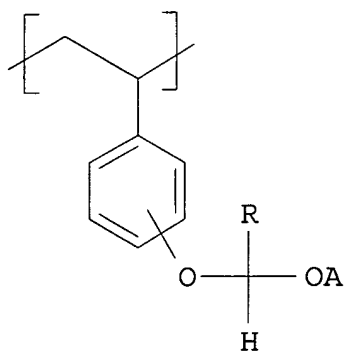
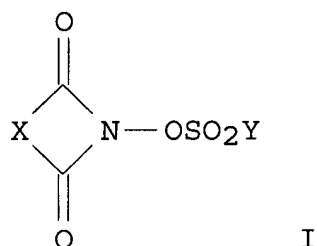
IT 110-75-8, 2-Chloroethyl vinyl ether 1131-60-8, p-Cyclohexylphenol
 (prepn. of substituent for polyhydroxystyrene; electron beam or
 x-ray **resist** compn. contg. **sulfonate** salt
photoacid generator)

L28 ANSWER 13 OF 14 HCA COPYRIGHT 2006 ACS on STN

128:28627 **Positive-working** photosensitive

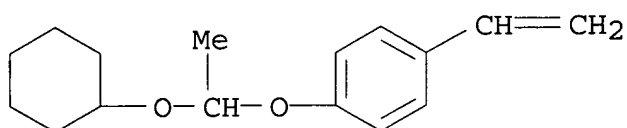
composition. Kodama, Kunihiro; Aoi, Toshiaki; Uenishi, Kazuya
 (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 803775 A1
19971029, 83 pp. DESIGNATED STATES: R: BE, DE, GB.
 (English). CODEN: EPXXDW. APPLICATION: EP 1997-106841 19970424.
 PRIORITY: JP 1996-105635 19960425; JP 1996-171327 19960701; JP
 1997-101924 19970418.

GI



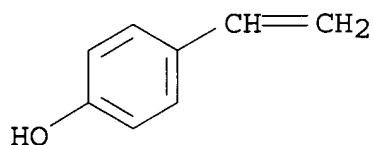
- AB Provided is a **pos.-working** photosensitive compn. useful for lithog. plate and semiconductor device manuf. comprising (a) a compd. represented by the formula I which generates a **sulfonic** acid by irradiation with active rays and (b) a resin comprising constitutional repeating units of the formulas II or III and having groups which enable an increase of the solubility in an alkali developer through their decomposition due to the action of an acid wherein Y represents an alkyl group, an aralkyl group, or a specific Ph, naphthyl, or anthracenyl group and Y may be bonded to the other **imidesulfonate** compd. residue, X represents an alkylene group, an alkenylene group, an arylene group, or an aralkylene group and X may be bonded to the other **imidesulfonate** compd. residue, R represents a hydrogen atom, an alkyl group, or an aralkyl group, and A represents an alkyl group or an aralkyl group and A may combine with R to complete a 5- or 6-membered ring.
- IT **199432-81-0P**, p-(1-Cyclohexyloxyethoxy)styrene-p-hydroxystyrene copolymer
(prepn. and use in **pos. photoresists** containing **sulfonate photoacid** generators)

RN 199432-81-0 HCA
 CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)
 CM 1
 CRN 190434-67-4
 CMF C16 H22 O2



CM 2

CRN 2628-17-3
 CMF C8 H8 O



IC ICM G03F007-004
 ICS G03F007-039
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST pos **photoresist** chem amplification oxime **sulfonate**
 IT Positive **photoresists**
 (chem. amplification; contg. oxime **sulfonate**
 photoacid generators and novolak resins)
 IT Photolithography
 (pos. photoimaging compns. contg. oxime **sulfonate**
 photoacid generators and novolak resins for)
 IT Integrated circuits
 Lithographic plates
 (pos. photoimaging compns. contg. oxime **sulfonate**
 photoacid generators and novolak resins for manuf. of)

- IT Photoimaging materials
(pos.; contg. oxime **sulfonate photoacid** generators and novolak resins for manuf. of lithog. plates)
- IT 57212-70-1 67695-82-3 159300-88-6 199432-74-1 199432-75-2
199432-76-3 199432-77-4 199432-79-6 199432-80-9
(**photoacid** generator for pos. **photoresists**)
- IT 125325-82-8, p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene copolymer
(pos. **photoresists** contg. oxime **sulfonate photoacid** generators and)
- IT 153698-63-6P 153698-69-2P 153840-05-2P 199432-83-2P
(prepn. and use as dissoln. inhibitor for pos. **photoresists** contg. oxime **sulfonate photoacid** generators)
- IT 19361-97-8P 56530-39-3P 199432-78-5P
(prepn. and use as **photoacid** generator for pos. **photoresists**)
- IT 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer 158593-28-3DP, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer, crosslinked 158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 196709-91-8DP, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer, crosslinked 196709-91-8P, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer **199432-81-0P**, p-(1-Cyclohexyloxyethoxy)styrene-p-hydroxystyrene copolymer 199432-82-1DP, crosslinked 199432-82-1P, p-Hydroxystyrene-p-(1-isobutoxyethoxy)styrene copolymer
(prepn. and use in pos. **photoresists** contg. oxime **sulfonate photoacid** generators)

L28 ANSWER 14 OF 14 HCA COPYRIGHT 2006 ACS on STN

127:42277 **Positive-working photoresist**

composition showing high resolution power. Aoso, Toshiaki; Fujimori, Toru; Yamanaka, Hitoshi; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09106073 A2 **19970422** Heisei, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-261635 19951009.

- AB The compn. contains (i) a resin contg. a basic N and an acid-decomposable group and (ii) an acid generator sensitive to active/radiation beam. The resin may contain CH₂CR₁C₆H₄OH, CH₂CR₁C₆H₄OR₂, and CH₂CR₁X or CH₂CR₁C₆H₄Y [R₁ = H, Me; R₂ = an acid-decomposable group; X = a basic-N-contg. heterocycle, CONHR₃Z,

CO2R3Z (Z = a basic-N-contg. group; R3 = alkylene, arylene); Y = a basic-N-contg. group].

IT 190434-68-5P 190434-69-6P

(alk.-developable pos.-working

photoresist compn. showing high resoln. power)

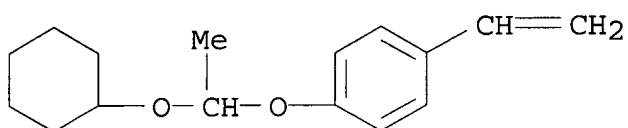
RN 190434-68-5 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylpyridine (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

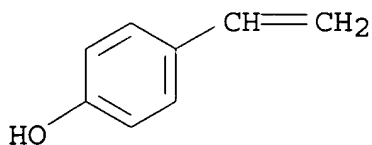
CMF C16 H22 O2



CM 2

CRN 2628-17-3

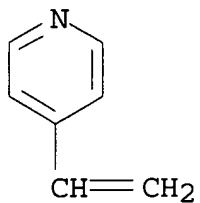
CMF C8 H8 O



CM 3

CRN 100-43-6

CMF C7 H7 N



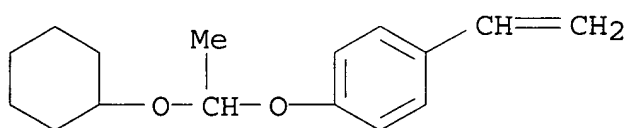
RN 190434-69-6 HCA

CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 2-ethenylpyridine (9CI) (CA INDEX NAME)

CM 1

CRN 190434-67-4

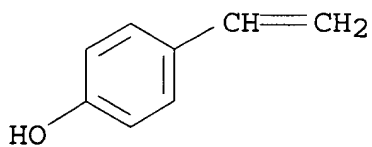
CMF C16 H22 O2



CM 2

CRN 2628-17-3

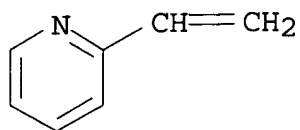
CMF C8 H8 O



CM 3

CRN 100-69-6

CMF C7 H7 N



- IC ICM G03F007-039
ICS G03F007-00; G03F007-004; G03F007-023; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
- ST pos **photoresist** chem amplified resoln power; basic
nitrogen contg resin pos **photoresist**
- IT Positive **photoresists**
(alk.-developable **pos.-working**
photoresist compn. showing high resoln. power)
- IT 926-02-3DP, tert-Butyl vinyl ether, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer 5292-43-3DP, tert-Butyl bromoacetate, reaction product with hydrolyzed vinylpyridine-acetoxystyrene copolymer **190434-68-5P 190434-69-6P**
190434-70-9P 190434-71-0P 190434-73-2P 190434-74-3P
190434-76-5P 190434-77-6DP, hydrolyzed, reaction product with tert-Bu bromoacetate 190434-80-1P 190612-94-3P 190612-95-4P
190677-60-2P
(alk.-developable **pos.-working**
photoresist compn. showing high resoln. power)
- IT 190434-66-3
(alk.-developable **pos.-working**
photoresist compn. showing high resoln. power)
- IT 66003-76-7, Diphenyliodonium **trifluoromethanesulfonate**
66003-78-9, Triphenylsulfonium **trifluoromethanesulfonate**
142096-70-6 176109-33-4 177786-96-8
(**photoacid** generator; alk.-developable **pos.-working photoresist** compn. showing high resoln. power)